Dynamics in responsible land administration; change at five levels

Jaap ZEVENBERGEN, the Netherlands, Walter T. DE VRIES, Germany, Rohan BENNETT, Australia

Key words: land administration, responsible, dynamics, change agents

SUMMARY

Fundamentally, the term 'administration' suggests bureaucratic, controlled and steady, if not slow, paces of change. However the relations between people and land, that land administration attempts to capture, are the very opposite and are changing rapidly. At all levels of abstraction, land administration can be seen as multi-faceted, crosscutting, inter-disciplinary and above all dynamic. Dynamics in land administration is currently visible in the social and political recognition - or negotiations on recognition - of land tenure typologies. The developments in geo-ICT create their own dynamics. They offer the opportunity for previously unforeseen methods of land data capture, visualization and sharing. Geo-ICT disturbs more than technical elements of land administration systems: organizational and political contingencies are placed in flux when technology selections are made. Dynamism in land administration is most prominently viewed in large-scale land tenure regularization programs, usually at the national level. Formal recognition of land rights changes the status of people, land, and the relationship between them. Fit-for-purpose approaches to data collection and management change the core characteristics of land administration: systems become flexible, inclusive, participatory, affordable, reliable, attainable, and upgradeable. After the intervention, the perceptions of landholders change: they might invest in the land, transfer it to other people; ultimately changing land use and land value. The changes must be monitored and evaluated - particularly in the contemporary era - where accountability of donor agencies, and all parties involved in the programs, is heightened. Measuring the interventions is no trivial task: isolating meaningful dependent and independent variables is an ongoing challenge. Socio-technical approaches are needed as are skilled personnel to implement them. This suggests substantial changes to social capacity, embodied in scaled capacity building programs: to reap the rewards of well-designed interventions, integrated capacity development activities are needed at individual, cross-organizational, and societal levels. When all the above changes coalesce in a harmonious fashion, 'responsible land administration' appears more readily achievable.

To summarize, the dynamics focus on changes regarding the following five issues, which will be elaborated in the paper:

1. Changes in the status of people-to-land relations
2. Changes in the conceptual and technological core characteristics of LA
3. Changing land use and land value
4. Measuring the change
5. Change agents

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1. INTRODUCTION

Fundamentally, the term 'administration' suggests bureaucratic, controlled and steady, if not slow, paces of change. However, based on the research we have supervised at ITC over the past decade (see esp. the different chapters in Zevenbergen, de Vries and Bennett, 2016a), we can conclude that the relations between people and land, that land administration attempts to capture, are the very opposite and are changing rapidly. At all levels of abstraction, land administration can be seen as multi-faceted, crosscutting, inter-disciplinary and above all dynamic. Dynamics in land administration is currently visible in the social and political recognition – or negotiations on recognition – of land tenure typologies (Simbizi et al, 2014, van Leeuwen 2014). The developments in geo-ICT create their own dynamics. They offer the opportunity for previously unforeseen methods of land data capture, visualization and sharing (Uitermark et al. 2010). Geo-ICT disturbs more than technical elements of land administration systems: organizational and political contingencies are placed in flux when technology selections are made (Kurniawan and de Vries 2015, Sui 2014).

2. CHANGES IN THE STATUS OF PEOPLE-TO-LAND RELATIONS

In relation to changes in people-to-land relationships, we see changes in different ways. On the one hand over time, changes always occur. By and large it is assumed that those changes are happening faster in more recent times. Partly due to increased pressure on land (population growth, urbanization, economic development related investments, climate change adaptation measures). Among the trends often signaled is 'individualisation', which is also highly criticised, especially in areas where communal land use fits best with the climatic circumstances. Stressful times, especially conflicts and disasters do often create more sudden jumps in the people-to-land relations, and often in post-conflict or post-disaster areas dealing with land issues is high on the agenda and changes to land administration are suggested and often a start with them is made. At the same time there is increasing international attention for the land relations of the underprivileged in society, and steps have been made to come to new conceptual insights on how alternative people-to-land relationships can be modelled to accommodate for the poorest in a society, among others for food security, by the crowds, and for the nomads. A clear example has been the development of the Social Tenure Domain Model (STDM), a basis for an alternative way for recognizing and recording people-to-land relations. Land is not only used or possessed by single persons for static parcels: dynamic models allow nomadic land uses to be documented as well. In other words, the new types of relations conceptualized with responsible land administration are increasingly becoming an indispensable ingredient for solutions in post-conflict governance, food security provision, and

poverty alleviation. In addition, 'the state' is perceived to no longer monopolize acceptance of people-to-land relationships: crowds and clouds for a part of an emerging alternative.

Regarding, changes in people-to-land relations there are a number of new challenges. First, rapidly changing social relations, embodied by population increases, especially in urban areas, mean further alternative pro-poor system designs will be needed. In particular, peri-urban areas need attention. These zones are often home to the poorest in society, but often fall into administrative voids between formal and customary systems (Zevenbergen et al. 2013). Second, the conceptual thinking of the 'continuum of land rights' (UN-Habitat/GLTN 2008), developed to illustrate the diverse ways that individuals and groups exercise rights to land, has proven useful to further the conceptual discourse on land rights, however it remains a debated concept under conceptual development (Whittal 2014). Further development and testing of the continuum concept should proceed, and this will affect the context of responsibility in which land administrators need to operate. Third, based on the soft law instrument of the Voluntary Guidelines for Governance of Tenure (VGGT, see CFS and FAO 2012) the concept of legitimate rights has gotten increasing attention. Although it is not defined in detail what legitimate in this case means, it is clear that this includes people-to-land relations that are not currently covered by the formal land administration system. For instance in section 3.1.1, it is said that States should "Recognize and respect all legitimate tenure right holders and their rights. They should take reasonable measures to identify, record and respect legitimate tenure right holders and their rights, .." This points (at least to some extend) in the same direction as the before mentioned continuum of rights approach, including statements on how to operationalise it within land administration. Fourth, with regard to the socio-cultural conflicts, everywhere, but specifically for rural areas, there is an increasing recognition for the role of women in relation to land. Although they are in many instances the main user of the land, their access is often still dependent on that of male family members. This reduces their position in general and makes them very vulnerable when the men (or the relation to them) disappear. Equal land rights for women (for access, use and as property holders) are needed to remedy this. This is however a multi-dimensional and seemingly contradictory issue. On the one hand, in various countries (such as Kenya, Rwanda, Tanzania) constitutional and land related legislation is adapted to better secure women's rights to land, on the other hand the de facto land use and access to land for women remains still disputed. Land administration systems will therefore need to support, reflect, and embed the recognition of women's rights better. Fifth, understandings of post conflict contexts and the role of land administration in them are improving, however, there is still a need to better conceptualize and cross-compare cases. Some of these conceptual studies have already begun (Hollingsworth 2014).

All these issues with the people-to-land relations have been combined and recognized in target 1.4 of the Sustainable Development Goals: "by 2030 ensure that all men and women, particularly the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership, and control over land and other forms of property, inheritance, natural resources, appropriate new technology, and financial services including

microfinance". (see also section 5). In the next section we will discuss how land administration as such is developing and could address these issues.

3. CHANGES IN THE CONCEPTUAL AND TECHNOLOGICAL CORE CHARACTERISTICS OF LA

Regarding changes in conceptual understandings and technological possibilities, innovative designs, such as the point cadastre and the use of simple tools like the digital pen show us that one can represent an interest in land with a mere point, as a first step. Increasing information processing power, alongside rapidly developing software alternatives, provide further opportunities for unconventional record and workflow management. These tools and designs seek to enable more rapid recording of changes to people-to-land relationships in a land information system: and that the system is kept up-to-date. A mix of pragmatism and multiple options for transacting parties - is evident across the designs.

Unpacking the broad statements above, a number of specific developments/tools are worth focusing in on. First, STDM - an open-source software package that is sunder constant development, but now also be up-scaled. It is not the only open source package available, indicating a certain trend in technology development and uptake. Land administration can tap into this trend, and use it to its advantage. Second, Unmanned Aerial Vehicles (UAVs) are increasingly available for citizens and NGOs, amongst others. Various tests are conducted to verify its application in the land administration domain, for example for mapping or monitoring informal settlement areas or rapid assessments after disasters. The application of such technologies can connect with or extend to earlier experiments of point cadastres, for example. Third, on the basis of terrestrial digital photogrammetry, there are new ways of creating 3D models. Mobile phone-based data collection tools, in combination with smart software, can be used to create 3D models – including 3D cadastral objects – in contexts where conventional methods do not allow this. This is an alternative for large-scale mapping, with relatively low-cost tools, and especially suitable for areas where there is no, or few, 2D or 3D cadastral data. Fourth, 3D, 4D, and 5D system modelling (Van Oosterom and Stoter 2010) are beginning to move past prototypes and piloting stages: these develops pay close attention to the height dimension: an increasingly important dimension in administrating the boundaries of urban properties. Added to this is the time dimension of both the spatial and legal attributes. Combined, they create a new kind of registration system, for which the implications are still not evident (Kitsakis and Dimopoulou 2014). The same holds for the (partly parallel) development of BIM, which shows differences and linkages to (esp. 3D) cadastres (Atazadeh et al 2017). Fifth, 'Green Cadastres' are also hypothesized (Bennett et al. 2012). These are cadastres that record the property interests of the natural environment. Climate change responses and unbundling of the conventional land parcel drive the creation of these new interests: a reconceptualization of the characteristics and spatial nature of real property is needed. Sixth, 'Open Cadastres' or 'Neocadastres'. The first term primarily refers to the uptake of social media and open source technologies for the purpose of the administration of land rights

(Laarakker and de Vries 2011, Basiouka and Potsiou 2014), whereas the second, first introduced by (de Vries et al 2014), refers to the new institutional relations which emerge as a result from the interaction of the newly emerging technologies (in the broad sense) and the conventional institutional settings of land agencies. The main question hereby is to which extent, and if so in which way, the conventional cadastral norms are altered in view of persuasive norms and associated practices of the new technologies. Given that institutional norms tend to be rather rigid, and largely rooted in historical practices, it is not easy to alter them, even though altering may be more appropriate given the changes in organizational or technical context. A crucial dilemma for the establishment of 'NeoCadastres' remains the trustworthiness and credibility (hence legitimacy) of alternative data alongside the data of conventional cadastres. This is however dependent on the institutional function and the institutional form (Ho, 2014). Whereas legitimacy of land rights has so far been predominantly described by the legal rules and legal space (hence the institutional form) to provide tenure security, a debate over the institutional function may be useful. For example the maps portrayed in the Global platform for indigenous and community land (http://www.landmarkmap.org/) may not have the legal or regulatory means to enforce certain land rights, but they do have a particular function, namely to recognize the existence of certain land rights and thus ultimately change the behavior in dealing with those. Finally, the era of 'smart land administration' beckons. Analogous to 'smart' cities, 'smart' government, and 'smart' mobility, smart land administration refers to the kind of processes of land administration which use social technologies, volunteered geographic information, and crowdsourcing in combination with the technical drivers of intelligent information systems and big, linked, and open data. Ultimately this will supposedly drive "smarter" solutions for land related challenges. The question however remains whether these solutions – which tend to have a technological bias – are necessarily more responsible.

4. CHANGES IN LAND USE AND LAND VALUE

In relation to land use changes, driving forces and actors will interact and potential produce significant changes: land administration systems will be called upon to support responsible governance of these changes. There is, however, an increasing paradox regarding land use changes: on the one hand there is an increasing need to differentiate between managing urban and rural land use given the increasing gap in type of problems and types of services, on the other hand, the interdependencies of many urban and rural regions are increasing. Hereby both new and/or adapted normative frameworks and the uptake of a set of revitalized and / or alternative tools and instruments play a role. to manage and administer these changes better. A generic concept to describe and address the urban-rural divide is that of 'spatial (or territorial) justice', which is both a term to assess major differences in land use, land development and land value between urban and rural areas and between the value conflicts between urban and rural needs, and a normative term to redress and cope with these differences. Key elements of these norms include the need to re-distribute the current unbalanced access to (land) resources, the need to provide more fairness and transparency in legal and decision making procedures related

to land, and the need for recognitional justice, i.e. to recognize and acknowledge the existence of marginalized and deprived people in society.

Specifically in fast urbanizing areas, the biggest challenges in contemporary cities in the global south (and east) include the uncontrollable rate of land conversion (predominantly from agricultural land to residential and industrial land use), the rapid increase in land value and property prices (and associated gentrification), the mobilization of intra-city land and property to support the creation of larger mobility infrastructural works and middle and higher income residential parks, and the increasing policy clashes between maintaining sufficient green and water on the one hand and allowing space for industry, residential areas and/or informal settlement on the other hand. The 'right to the city', introduced by Henri Lefebvre (1996), yet used by multiple authors after that, describes and prescribes new forms of urban land use management. Specifically it addresses how to better connect urban livelihoods, urban space and formalization of tenure rights in (peri-)urban areas (e.g. Brenner et. al, 2012; Mayer, 2012). The key tenet of 'the right to the city' is that the responsibility for the allocation and acceptance of who may access, use and occupy urban space needs to be better shared with the immediate stakeholders and beneficiaries of that urban space. Hence, new residential areas by large developers should not be planned and constructed without any consultation with existing land tenants, even if these are occupying land without any legal certificate. In addition, the right to the city addresses the need to establish more affordable and secure housing schemes within the city boundaries for people with lower incomes and it addresses the need for any city resident (low or high income) for more direct influence in how the city develops.

Rural regions are facing a completely different set of challenges, such as the large-scale land acquisition, dispossession and conversion of agricultural lands into areas for biofuel and other mega energy projects, an increasing loss of regional identity and cultural landscapes due to depletion of natural resources and eroding soils, and an increasing visibility of socio-cultural conflicts related to land use.

To address land use (planning) in a way that is in line with all the above (and section 2), the tenure responsive land use planning guide (Chigbu et al. 2016) is developed, providing a number of best practices for land use planning. Though relevant for both urban and rural regions, it particularly focuses on how security of tenure in rural regions has been affected by the fast urbanization and land use change (land conversions), and how these problems can be addressed.

Last but not least, rural land consolidation and urban land readjustment are tools to assess and handle land use and land value conflicts and might prove to be more effective than ever before. Whereas the rural tool may have been originally designed to support the increase in agricultural efficiency, in most countries the tool itself has evolved into a participatory instrument to resolve diverging and often conflicting claims to land, whereby each of the claims rely on different value system (e.g. economic, ecological, socio-cultural, climate sensitive or territorial values). Land consolidation connects the possibility to exchange land with the possibility to create joint benefits and/or compensation measures in multiple value systems. Hence, it is possible

technically to compensate an increase in agricultural value with an increase in ecological value and vice versa. Moreover, the process to obtain such mutual benefits is usually done in a participatory manner, thus providing more ownership and self-responsibility of the immediate stakeholders.

Urban land readjustment in a similar way allows to either convert peri-urban land into urban use, or support upgrading of urban areas (e.g. in Turkey, see Turk and Korthals Altes 2011). Core principle is that the land holders receive less land than they brought into the project, but that the value of returned land is so much higher that they are better off in any case, and the 'extra' land is boht used for infrastructural and other joint areas, as well as for capturing the investments by selling some plots of. Although in some countries land readjustment has been benefiting only the elite that had fully recognized land rights, more inclusive approaches have been designed and trialed (see e.g. PILAR – Participatory and Inclusive Land Readjustment, UN-Habitat/GLTN 2016).

5. MEASURING THE CHANGE

In relation to measuring the changes, good impact measurement informs intervention management and in some cases redesign. Increasingly attention is given to this and alternative evaluation methods are being developed. Combining the perceptions of people with remotely sensed land use changes helped to visualize and understand impacts. At first glance, it seems there are no winners following one intervention: users are pushed from the land and even from having access for the greater good of society (i.e. nature preservation). A better analysis of each stakeholder's needs helps to find a win-win solution. Similarly, related to post-conflict governance and protracted displacement, it can be shown how rapid societal changes impact upon land administration and vice versa. Specific methodologies designed for violent conflicts, could also be applied in contexts where natural disasters have occurred. In both cases it results in multiple layers of claimants from different periods of time, each requiring recognition, administration, and a certain level of legitimacy. Different solutions for giving each user land were trialed in post-conflict Rwanda: the peace was kept, but it also influenced the later land tenure regularization intervention. Another framework is that of responsible land management (de Vries and Chigbu, 2017), which provides a generic assessment tool to evaluate whether the land use interventions are responsible or not. It is based on an 8R model (i.e. responsiveness, respect, reliability, resilience, robustness, reflexivity, retraceacibility and recognizability), which can be linked to institutional structures, the manner in which processes are carried out and the way impacts are fostered and matched. Any land intervention should be seen as a complex system changing multiple aspects in society. These changes need to be evaluated from multiple angles in order to be qualified as responsible.

In relation to measuring the changes, a one overarching initiative needs attention. Evidence of the existence, and effectiveness, of pro-poor approaches needs to be assessed – especially with regards to the land related indicators of the Global Development Goals (SDGs), which can be

found in a number of goals. Esp. indicator 1.4.2 is close related to land administration, although it might also bring the risk of governments only doing the bare minimum to increase their percentage on this without really taking care that 'no one is left behind'. It remains unclear to which baselines conventional evaluation schemes are measuring, and to which extent, or under which conditions, land administration and poverty alleviation can be truly connected. Indeed, this appears to be one of the key challenges for responsible land administrators, namely to develop and test alternative methods of measurement, evaluation and attribution. This same challenge links to other global development agenda objectives, and their links to land.

The GLII global land indicator initiative has been working hard on unpacking the notions around land issues, but of course within the setting it operates has to come to compromises between different stakeholders, and still the final say is within the UN system, esp. UN Statistics who also wants to be sure about the quality of the information for the indicators. On this, the recent move of land related indicators from Tier III to Tier II can be seen as a sign of success, since this means that the methodology to measure the indicator is now available and accepted. Only when enough data will become available will a move to Tier I be possible. First work on that has been initiated via Prindex, the Property index project (http://www.prindex.net/), that by adding specific questions related to property rights and (perceived) land tenure security in ongoing national-level opinion polls, aims at collecting perception information worldwide. After several pilots, recently a first round of more substantial numbers for three countries in three continents has become available.

A third development is the increasing reliance on globally recognized NGO measurements, such as the works of Land Matrix (http://www.landmatrix.org/en/). Proclaimed as a 'global observatory' of large-scale transnational transactions in land the land matrix is not complete, but increasingly providing a better insight in 'migration' of land (land belonging to one country being used for the benefits of another). These types of repositories of land transactions connected with for example FAO repositories of food deficiencies per country or even per lower levels of administration derive new combinations of global data on land use and misuse. Hence, evaluation tools for understanding the role land administration plays, and can play, in supporting a whole range of objectives are needed including: food security, climate change, gender equality, anti-land grabbing activities, positive land consolidations, equitable land readjustments, and alternative urban tenure security models,.

6. CHANGE AGENTS

In relation to the change agents, it is important to realize that we need a new type of (responsible) land administrators: these actors should look beyond their traditional professional and academic boundaries. For instance to keep an innovative land administration system up-to-date once it has been set-up and filled, needs IT and work flow managers that are neither pure computer scientists, nor pure topographic or cadastral managers. The role of the crowd in e.g. 'Open Cadastres' brings new actors into the land sector; a field which has tended to be heavily regulated by licenses and accreditation instruments. Information is another change agent: if 'information is power', documenting people-to-land relationships not only influences tenure security at the individual landholder level, but also empowers different groups of landholders with respect to local and national governments. If land interventions are well executed, they not only give us 'responsible land administration', but make contributions to better land governance and towards shared prosperity.

In relation to the change agents a few points can be made. First, a new type of land administrators is emerging. They must realize the broad impacts of land interventions on all aspects of sustainability (social, economic and environmental), the political-economy between those depending on cheap land access and those playing with landed property as a near abstract asset, and the finite nature of (useable) land on an ever populated planet. They must understand the different dogmatic positions of idealized types of people-to-land relations and their documentation, including the fact that the day-to-day reality is never black or white, but only has contextualized shades of grey. Second, new ways of designing and conducting capacity development assessments are needed. Understanding that capacity is very much related to local context and the stakeholders' frames and needs embedded in this context, implies that capacity development is no longer a static exercise of determining a fixed gap in eternally required skills and knowledge. It implies that one has to continuously assess how frames and needs are changing in time, place and political and organizational contexts, and how provision of skills, experience and knowledge can cater for these given a limited set of resources. With regard to the change agents, part of the responsibilities lie with institutes that train land professionals, or better, that develop capacity in the land sector. Universities with land related programs play an important role in this, as they are usually at the top the 'training food chain'. Too much focus on disciplinary knowledge and skills can even be counterproductive and lead to sub-optimal choices in land interventions. Land professionals need as much development of their attitudes as their technical skillset.

Unfortunately it is still very common worldwide that programs that train land professionals are quite 'silo-ed' and focus heavily on teaching how to work in the context of the specific country (or state); taking the existing legal and institutional arrangements as set. Although to some extent this can be acceptable at the basic level, this is detrimental at the higher levels (certain Master's and PhD levels). Land issues cannot be solved within one discipline, so there should be attention given to this multi-disciplinarily of the issues; at a minimum equipping the professionals to understand that there are different lenses through which to look at land related

issues, and better to be able to look through several lenses themselves. Furthermore, a base to land administration, land management and land governance at a global scale should be given; showing some of the conceptual works (like the Land Management Paradigm (Enemark 2006, Williamson et al 2009)) and some of the normative principles of good governance and responsible land administration. Finally the professionals should be confronted throughout the programme with examples from other countries (and states); realizing that the way things are organized in one's own jurisdiction are not the only way possible and not always the most logical way either.

Only with an interdisciplinary outlook, knowledge of international trends and being aware of the diversity of solutions in use throughout the world, will the professionals at the higher levels be able to constantly rethink, and redesign the land administration system in their country or state. As we say, there is dynamics in all kinds of ways surrounding land administration, and only by constantly adapting the way things are done, will land administration be able to stay responsible. Although not limited to those, it calls for land professionals that engage in continuous professional development, and training institutions that combine ongoing research and capacity development beyond one discipline. Much of land administration has grown in departments that traditionally where called land surveying, and FIG (and esp. Commission 7) served as the international platform to share and discuss ideas on this. With the multi-disciplinary approaches that are needed to fully embrace responsible land administration, this is, however, under pressure. Land surveying is being increasingly renamed in the direction of terms like geospatial sciences, which link it clearly to the technological advances , but do not automatically create a fertile place for the broader perspective. International projects (e.g. SEALAN (https://ealan-network.org/sealan-project/) and ADLAND (Chigbu et al 2018)); online resources (e.g. https://www.land-links.org/event/land-tenure-property-rights-mooc-3-0/; http://www.fao.org/tenure/resources/collections/e-learning/en/; https://www.edx.org/course/introduction-land-management-tumx-ilmx) and the ongoing work on GLTN's Structured Knowledge Base on Responsible Land Administration all aim at supplying appropriate material to be included in capacity development activities at different levels to make sure upcoming land professionals can be true change agents that contribute to meeting the Global Agenda.

CONCLUDING REMARKS

Responsible land administration is especially developing in a world confronted by global challenges as rapid and massive scale urbanization and migration, as well as major conflicts relating to land, food security, water, infrastructure and other resources. The Global Agenda of leaving no-one behind as translated into the 17 Sustainable Development Goals show the ambition to address those. Land issues can be found in many of the SDGs and issues of rights and security of land is explicit in four of them. Therefore, land administration needs to scale up efforts and integrate with other domains, incorporate new axioms, and seek out the new paradigms and research questions to contribute. The issues are mainly socio-technical and institutional in nature, creatively combining globally available technologies with a clear understanding of a legal, organizational and governance context. In this way land administration can further develop into a new type of scientific discipline; one which can support the derivation of contemporary fit-for-purpose and responsible solutions.

With the speed of change that is confronting us at all levels of dynamism, no discipline, profession or international organization can afford to lean back without risking becoming obsolete. If not, even licensed (cadastral) surveyors could face the fate of Polaroid.

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BIOGRAPHICAL NOTES

Jaap Zevenbergen is Professor in Land Administration and Management at the Department of Urban and Regional Planning and Geo-information Management and Vice-dean Education, Faculty ITC, University of Twente, Enschede, the Netherlands.

Walter de Vries holds the Associate Professorship of Land Management and Land Tenure, Faculty of Civil, Geo and Environmental Engineering, Technical University of Munich, Munich, Germany.

Rohan Bennett is Associate Professor in Information Systems at the Department of Business Technology and Entrepreneurship, Faculty of Business and Law, Swinburne University, Melbourne Australia.

CONTACTS

Prof.dr. Jaap Zevenbergen
University of Twente, Faculty ITC
Hengelostraat 99
7512 AE Enschede
the NETHERLANDS
Tel. +31 53 487 4351
Fax: +31 53 487 4400
Email: j.a.zevenbergen@utwente.nl
Web site: http://www.itc.nl

Univ.-Prof. Dr. Ir. Walter de Vries
Technische Universität München
Arcisstrasse 21
D-80333 Munich
GERMANY
Tel. +49 (89) 289 - 25799
Fax. +49 (89) 289 - 2293331 53 487 4351
Email: wt.de-vries@tum.de
Web site: http://www.landentwicklung-muenchen.de

Dr. Rohan Bennett
Swinburne University
John St, Hawthorn VIC 3122
Melbourne
AUSTALIA
Tel. +61392144991
Fax. +6139819 5454
Email: rohanbennett@swin.edu.au
Web site: https://www.swinburne.edu.au