

"Dear Kees, with deep respect and warm memories, I think about you as a person and leader. You are a very positive, pleasant and entertaining colleague with a strong personality. You managed Kadaster International effectively, led an international UN expert group on a key topic, chaired many sessions, while combining an apparently, natural tranquillity, with knowledge, humour, people skills and vision. It was a privilege and pleasure working with you!"

- Frank Tierolff -

you can see in the photo from the working weel 2016 in Christchurch, New Zealand, Kees is a fearless warrior, not only for land administration and its implementation."

'Dear Chrit, dear Kees, we wish you all the best for the next stage in your life!"



"A standard quote of Chrit is "we have to look closer into that", but always with the objective to create even better implementable and understandable solutions. You have certainly educated us in really making land administration work!"

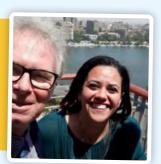
About Kees: "Looking beyond technology and systems, but, above all, enticing stakeholders to take action always is the pivotal key to success!" - Martin Salzmann -

"Chrit, most of us know you as a very intelligent and kind person. You bring tremendous knowledge and experience to land administration, with LADM and STDM being very famous 'products'. Beyond that, I am so glad that I also know you as a very warm colleague with whom I had intensive and good discussions based on deep respect for each other. Every time we could find a common ground and a well-considered conclusion. Thank you for being such a nice warm colleague Chrit!"

- Frank Tierolff -

"I first met Chrit in 2004 and since then he has been my mentor and dear friend. Together, we have worked in many countries. He has inspired thousands around the world to be a defender for 'land rights for all.' Esri and Kadaster have worked collaboratively over many years to operationalise Fit-For-Purpose and LADM, and it was Chrit who created the foundations and common communications around land. As we wish him the best in his golden years to enjoy with his family and beautiful granddaughter, we vow to keep inspiring others to join the ranks of those defending land rights!"

- Kholoud Saad





"Chrit, we can hardly express our gratitude to you for sharing your impressive knowledge and experience on land administration and for your subtle ways of challenging us to push our limits!"

- Hanka Berdys and Joop van Staalduinen -



nas been my mentor and friend, always present to giv advice on balancing academia and business. He is nov my mentor in my PhD research. I am grateful to have such a noble person in my life." - Marisa Balas -







"Chrit is so passionate about inclusive approaches to land administration, that he even lectures about them to those that already agree with him, even outside of class."

"I learnt a lot from working closely with Kees in numerous joint endeavours, especially how to switch between and balance the broad overview and the more intricate details."

"The complementary talents of Kees and Chrit helped Kadaster International move to the next level as a source of land administration expertise and consultancy over the past decade." - Jaap Zevenbergen -

"Thank you both for all you have done to democratise land administration, bringing concepts of bottom up land administration to the mainstream. We appreciate the support provided as teachers, colleagues, advisory board members and critics to Cadasta and our team over the years and recognise our work wouldn't be possible without the foundation you all have helped to lay!" - Frank Pichel - "Dear Kees and Chrit, I am very grateful that our paths have crossed so often in the last 6 years! Thank you for inspiring me, coaching SmartLandMaps and showing me what it means to successfully put knowledge into practice." - Claudia Stocker -



"When I first met Kees, he was one of the creative brains in the geo-information innovation programme at Wageningen UR, where he introduced the flip camera to make research more tangible. Later, when he became a member of the advisory board of the Wuhan University -TU Delft cooperation, he kept our feet on the ground when our scientific dreams were getting out of proportion."



"Chrit and I first met in Paris where we started discussing spatial databases and cadastral data; this discussion is still ongoing. Highlights include the realisation of LKI 3.21 (and our meetings with Tapio and Esa), the LADM standard adopted by ISO, the defence of Chrit's PhD thesis, and Chrit becoming a part-time professor at ITC. We both had issues with meeting deadlines, but in the end we always inspired each-other to deliver. This was more than a professional connection, it was a fantastic and productive friendship." - Peter van Oosterom -

"Kees' work on 'land rights for all' and his contribution to UN-GGIM Framework for Effective Land Administration will help many countries around the world in shaping their land administration systems. Kees pursued key partnerships to drive things forward, to create action. Wishing our roads would again cross, for you're a true friend, a great expert, and the best manager one can wish for."







of the symposium available on

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# **Bringing networks and knowledge into practice** For effective land administration systems that provide For several decades, Kada

newsletter of kadaster international september 2022

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Mohana, Ciénag

security of land and property rights, we need three key elements: networks, knowledge and practice. Since Kadaster International began its work, these elements have defined our approach and helped us to generate an impact in a responsible and efficient way.

In this special Abroad edition, we reflect on these three key elements. We look back at what we have achieved, and explore how we can contribute to the challenges that lay ahead. We also recognise the significant contribution and impact on our profession by Chrit Lemmen and Kees de Zeeuw. After many years of dedicated service, both are leaving Kadaster on September 1<sup>st</sup> 2022.

#### More relevant than ever

A large proportion of humanity does not enjoy secure land and property rights. This is our global challenge in the domain of land administration. We need to speed-up and improve our efforts to document, record and recognise people to land relationships in all their forms. As decision makers, experts and beneficiaries, we need to collaborate to achieve this common goal. For several decades, Kadaster has worked together with governmental institutions by providing expertise in setting up, operating and improving land administration and geo-information. This is more relevant than ever before.

SPECIAL EDITION

"It is key to discuss, learn and grow together for effective and inclusive programmes and actions to achieve the Sustainable Development Goals"

Frank Tierolff at the Geospatial World Forum last May

### **One last time: Chrit and Kees**

Together, we must make sure we understand the needs and requirements, involve our network, and enable the next generation to continue. Both Chrit Lemmen and Kees de Zeeuw have brought people and networks together and stimulated creativity and innovation. Both invested in the development of approaches, models, frameworks, and people to achieve our common goal. As both move into new endeavours, we took the opportunity to have Chrit and Kees inspire our community one last time. Together with colleagues and friends, we shared knowledge, experiences and memories.

Paula Dijkstra

# Knowledge matters

Mathilde Molendijk | Kadaster

Over the past decade, many articles have been published on land administration in its broadest sense. Not only on models such as the Land Administration Domain Model (LADM) or concepts such as Fit-For-Purpose Land Administration, but also on technical solutions, economic assessments, social implications, legal issues, lessons learned in practical pilots worldwide, and so on. These are presented and debated in many workshops, seminars, and conferences. The wealth of knowledge is impressive, as it entails not only understanding but also applying knowledge into practice, making judgements,

considering ethical responsibilities, and communicating with spe and non-specialist audiences.

What has this wealth of knowledge brought us and what is next? We have asked representatives from academia to reflect on this. Is there room for improvement in the knowledge triangle of academia, public and private sector? How can we apply academic research in practice? Vice versa, how can practical problems or innovations ignite academic research?

■ <u>1</u> = <u>3</u> @

## Lifecycle thinking



TU Delft has a long and proud history of knowledge development in the domains of geodesy and land administration. The digital era has radically changed the way we manage landscapes and the information that relates to it. One of these new knowledge developments is Spatial Development Lifecycle (SDL) thinking, particularly in relation to 3D (cadastral) objects. This is the focus of my current work. The SDL provides input for land registration and cadastres in terms of data acquisition and design processes. In this regard, Building Information Model (BIM) is a promising and rich source that can be reused (under specific requirements and following rules for its structure) for land administration. The information management, exchange and reuse during the lifecycle of 3D (cadastral) objects requires interconnection between the disciplines involved and various scales, as well as the development of standardised approaches to address those challenges. I have been working on this, also from the perspective of the Land Administration Domain Model (LADM), where Kadaster plays a leading role, being part of the ISO TC211 editing committee of the second edition of LADM (FIG liaison).



## Marisa Balas | University of Lisbon

Mozambique started a massive land registration programme aiming to register five million parcels and delimitate four thousand communities. The results of the first two years of this programme illustrated that the conventional methods utilised for the land tenure registration were too expensive and time-consuming and faced several data quality problems. Academia, businesses and government came together to conceptualise, develop and test a country-specific Fit-For-Purpose Land Administration (FFPLA) approach for Mozambigue, denominated FFPLA-MOZ, working together for two years, fine-tuning the approach. The FFPLA-MOZ intertwines three pillars: people, processes, and technology and is: (i) in line with legislation; (ii) appropriate to the circumstances and needs of the systematic registration; (iii) cost-effective; (iv) based on available technology; and (v) fit to establish a sound and sustainable land administration system.

## Joint development

### Jaap Zevenbergen | ITC University of Twente

Right from the inception of ITC, we have aimed for impact with our research, education and projects. Geospatial technologies are constantly evolving, with lots of investment coming from the geospatial industry. Whether it be through traditional analogue instruments or later digital software tools, practice and academia have always worked alongside to tailor it for cadastral use. These days, increasingly integrated and dedicated land administration solutions are brought to the market. Development of ideas and prototyping can now come from either practice, academia or industry (or jointly), but industry naturally leads at the higher technology readiness levels. An example is the early development 15 years ago of the concept of the Social Tenure Domain Model (STDM) at ITC, led by Chrit Lemmen, which became the base for a whole string of products.

# **Digital trust** Martin Salzmann | Kadaster

# Over the past 10 years, land administration has sparked a lot of

research and development related to digitalisation (from reconsidering access regimes, quality improvement, active involvement of partners in the value chain, privacy, security to 3D) in European countries. Whereas trust in the land administration domain traditionally largely stemmed from institutional arrangements, the focus is now on providing trust in a digital society. Increasingly, land administration operates in relation to and cooperation with digital government and the (private) parties in the (international) land market. This requires

a more holistic approach, not only focussing on rights, restrictions and responsibilities, but also on the stakeholders and providing added value to society at large. We experience that also mature systems have to develop in a 'fit for purpose' manner and consider interdependencies. Design principles and standards such as FELA and LADM are very useful in further developing our land administration eco-systems.

# Importance of networks Christelle van den Berg | Kadaster



To set up an effective land administration system, exchanging information and cooperating with all stakeholders in the domain is essential. We need each other. Land administration has so many aspects: from legislation to data collection in the field, and from research to the development of digital systems. No company, university, governmental organisation or NGO can cover all these aspects on

## Leadership and networking



Eva-Maria Unger | Kadaster administration domain. This milestone was hard work by the expert group members but also possible because of the leadership and networking skills I would describe networking as 'developing meaningful of Kees. He made it possible that also non-governmental organisations relationships with other professionals' and Kees did this as the UN-GGIM such as the World Bank, UN-Habitat, Global Land Tool Network and the co-chair of the expert group on Land Administration and Management Food and Agriculture Organisation contributed towards its development to its excellence. In his term as co-chair, networks were built in strategic through substantial reviews. Similarly, Chrit created networks for the and new ways on professional but also on an organisational level. With development and uptake of the FFPLA approach and LADM. These the development and final adoption of the UN-GGIM Framework for strategic networks and longtime relationships were imperative for the Effective Land Administration (FELA), we achieved a milestone for the land milestones achieved for the land administration domain.

## Networking the FIG way

Rudolf Staiger | International Federation of Surveyors

The International Federation of Surveyors (FIG) provides an international platform for exchange and networking via our yearly working weeks and the 4-yearly congress. Both Chrit and Kees have taken part over the last 20 years on a regular base. They are active in sharing and advocating to the vast variety of people from all over the world. Over the last 10 years, Chrit became for our community Mr. "Fit-For-Purpose". He really pushed his approach into the land administration mainstream, with all his knowledge, power, and passion. Besides this, he was the main driver in implementing the ISOstandard on LADM.

## Leaving a legacy

Clarissa Augustinus | Global Land Tool Network (formerly)

Chrit and Kees, through the Dutch Kadaster and ITC, have laid a global foundation as partners of the Global Land Tool Network with Fit-For-Purpose Land Administration (FFPLA) and the Social Tenure Domain Model (STDM). It started with a meeting of Chris Paresi of ITC, Stig Enemark of FIG and myself, and involved Chrit's PhD. It took years of work and many meetings. Their thinking has shaped policy and practice globally and in many countries and communities. The way they went about thinking about these tools has been key to their success. It is not just a technical design. Instead, they have involved diverse audiences, developed relationships and built capacity, had contested and uncontested conversations, piloted and experimented, honoured errors and tried again, and used STDM as an intellectual device-the soft systems methodology. Let's not stop here but continue to build on what we have learnt!

their own. Fortunately, it's getting easier to find each other. A first introduction online can be scheduled in no time. Even so, face-to-face contact seems to be the most effective way to sustain relationships.

Sustainable practices

Rohan Bennett | Kadaster

It is through 'practice' that we realise the benefits of effective networks and knowledge generation. In the applied domain of land administration, via practice we truly show and measure our value and contribution to society. At Kadaster, we are driven to continually improve our registration and mapping practices through the use of emerging technologies or more sustainable practices, delivering better outcomes for citizens from around the Netherlands. At Kadaster International we work with other national land administration



agencies, sharing those good practices, and in some cases helping to responsibly co-create them, such with Fit-For-Purpose Land Administration (FFPLA), Land Administration Domain Model (ISO 19152 LADM) country profiles, and the country-level implementation of the UNGGIM Framework for Effective Land Administration (FELA) We also work with private sector partners and the not-for-profit sector including Esri, Trimble, and Cadasta, and emerging start-ups like SmartLandMaps, to develop whole-of-sector national practices.

# Networks at scale

Frits van der Wal | Dutch Ministry of Foreign Affairs

Strengthening land governance has been on the Dutch government's agenda for over 20 years.

At the end of the 1990s, the Netherlands became one of the first strategic partners of the International Land Coalition.

Later, large-scale land acquisitions, triggered by the global food and energy crisis in 2008/2009, contributed to the establishment of the Netherlands land academy or LandAc. The aim was to increase knowledge, through multi-stakeholder partnerships, on how to improve inclusive and sustainable land governance.

Around 2011, the Netherlands was active in developing the Voluntary Guidelines on Governance of Tenure (VGGTs) of the Committee on World Food Security.

In 2014, the Netherlands became an active partner of the Global Land Tool Network (GLTN). The so-called Land Dialogue was established in which Dutch companies, knowledge institutions, government institutions and NGOs discuss how to put the VGGTs principles into practice. Next to this, the Dutch Ministry supported various NGOs in strengthening women's land rights and Fit-For-Purpose Land Administration in partnership with Kadaster International.

Ultimately, in 2019, the so-called Land-at-Scale programme started, in which low- and middle-income countries are supported through the Netherlands Development and Enterprise (RVO) agency to improve demand-driven aspects of land governance. As the Netherlands is convinced that land rights and sustainable land use are foundational to many of the SDGs, this programme is funded by various departments of the Ministry of Foreign Affairs.

## Partnering for practice



The land administration sector is insular, dominated by highly trained lawyers, surveyors and notaries - and as a result, often seen as too complex and costly to address within the broader global development agenda.

Chrit Lemmen and Kees de Zeeuw, and their colleagues, have worked to bring land governance to the masses - putting concepts like fit-for-purpose approaches and data standards on "the map" so to speak. Their embrace of technology and new approaches is helping to democratise land governance, ensuring the global data gap in the land sector can be filled...and processes improved upon.

Indeed, when Cadasta was launched in 2015, with a goal of helping to simplify, modernise and expedite the collection of property rights, it was upon these principles that we were founded. Changing norms in land governance in conjunction with technology availability have created the operating environment for Cadasta, and how our work has evolved.

## Practicing Fit-For-Purpose



## 👹 🗐 Hanka Berdys and Joop van Staalduinen | Kadaster

Our most recent experience working with Chrit Lemmen is the project in Benin. Chrit took part in the design of the 'LADM country profile for Benin'. We designed the country profile in close cooperation with local experts of land administration agency (ANDF) and consultants of Kadaster International. Chrit's contribution here was - as usual - invaluable. Being a long time land administration professor at ITC, lecturing is in his blood. When working with him in Benin, during the daytime, his 'students' were land administration experts at ANDF, and during the evenings, he continued lecturing us. The project in Benin is based on field data collection according to the Fit-For-Purpose Land Administration (FFPLA) principles. However, once data is collected, it also must be maintained. This requires a reliable land administration IT solution. In Benin, we have introduced the Fit-For-Purpose Information Technology (FFPIT) approach, inspired by FFPLA.

## Translate into technology



Khouloud Saad | Esri

Esri has had the great pleasure of working closely and collaboratively with Kadaster International for many years. The successful Fit-For-Purpose approach has been our achievement together. We could build upon Chrit's foundation and Kees' partnerships to operationalise FFP methodologies and the LADM. GIS technology, based on web services, has enabled a fast configuration of LADM, which has proven to be key as a repeatable framework that we share freely. We like to think of it as Esri translating it all into technology, after the hard work by Kadaster International. Together, we have put FFP/LADM into practice around the world, in places such as Colombia, Rwanda, and Kenya. In each case, the unique skill-sets of our staff teams, combined with our technology, have resulted in successful land administration projects.

## Support for start-ups



### Claudia Stocker | University of Münster

Putting knowledge into practice is the credo of SmartLandMaps, a young start-up initiative of the University of Münster in Germany. Based on several years of research and development work, our goal is to accelerate the digitisation of analogue participatory mapping results. SmartLandMaps' tools are based on innovative technologies such as artificial intelligence, cloud computing and modern photogrammetry. These approaches can help to relieve local, regional and international organisations from the time- and resource-intensive manual digitisation of paper maps. They help to fast-track the digital documentation of land rights without relying

on costly field equipment and experts that take years to train. We believe in the wealth of local participatory mapping and provide tools and services to support such activities with know-how, digital questionnaires and an automated cloud-based digitisation pipeline. Essentially, all it takes is a few photos of the paper map and the results of the digital questionnaire to produce the desired digital output, which includes both descriptive and spatial information on rights, restrictions and responsibilities.