International Land Measurement Standards - bringing the concept of ‘fit-for-purpose’ to the land transaction process

James Kavanagh MRICS C.Geog
RICS, Director Land Group, London UK
Jkavanagh@rics.org

Paper prepared for presentation at the
“2017 WORLD BANK CONFERENCE ON LAND AND POVERTY”

Copyright 2017 by author(s). All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.
Abstract

Statistics on global land issues are stark – 70% of land and property in the developing world is un-registered and outside of formal markets, 90% of residential and commercial property in Africa is untitled and land and property transactions are high on the global corruption index. Responsible governance of land is also at the core of resource management and sustainable extractive industries. Much of the headline challenges are well known to land professionals, from land grabbing, to tenure vulnerability, to ineffective land administration and corrupt governance and to a lack of professional capacity. At the very core of these multiple land issues is the lack of a consistent, global and easily understood standard on land transaction and a common understanding of the essential elements needed within that process. ‘Fit for Purpose’ is a key concept but not just for spatial measurement, it is also important that it is used for valuation/appraisal and land reporting. The object of the exercise is to aid and de-risk the process of land investment and real property transfer. The pressure on land measurement systems, professional surveyors, land professional, registries and cadastres will only increase as crowdsourcing, use of drones, ‘Fit for Purpose’ concepts and lack of funding for national agencies becomes more widespread. Without a standardised, high level approach - the chances of land data and transaction chaos is very high. A global coalition has formed to look at these issues and propose a standardised approach to land reporting.

Key Words:

Keywords: infrastructure development; fit for purpose; valuation; land transfer; compensation and resettlement; cities and urban expansion; conflict and competing claims;
International Land Measurement Standards - bringing the concept of ‘fit-for-purpose’ to the land transaction process

James Kavanagh MRICS C.Geog, Director Land & Resources, RICS jkavanagh@rics.org

Keywords: infrastructure development; fit for purpose; valuation; land transfer; compensation and resettlement; cities and urban expansion; conflict and competing claims;

Statistics on global land issues are stark – according to the World Bank 70% of land and property in the developing world is un-registered and outside of formal markets, 90% of residential and commercial property in Africa is un-titled and land and property transactions are high on the global corruption index. Responsible governance of land is also at the core of resource management and sustainable extractive industries. Much of the headline challenges are well known to land professionals, from land grabbing, to tenure vulnerability, to ineffective land administration and corrupt governance and to a lack of professional capacity. These land based issues have now started making global media headlines increasing the need for transparent and consensus driven global standards to help economic development and ease the equitable transfer of land (and rights over land).

The UN Habitat New Urban Agenda (as adopted at Habitat III Quito 2016) has highlighted fair land transfer and compensation for legal acquisition as one of the major enabling factors behind a sustainable and equitable urban future for the world. The often fragmented process of rapid urbanisation has moved land transfer and related tenure security issues towards large scale acquisition for infrastructural development. Although the previous ‘land grabbing’ locus of agricultural investment is still important. There is an urgency developing within the infrastructure and urbanisation sectors as nations develop, income improves, pressure on scarce resources increases and competition for Foreign Direct Investment FDI becomes fierce.

Land issues are fundamental to infrastructural development (as we will see in the UK when High Speed 2 begins and the Compulsory Purchase of land and property starts in earnest), without a clear and equitable format of land transfer which protects the rights of both the seller and the investor; costs will increase, conflict and legal challenges will escalate and projects will over-run or not happen at all. Surveyors are right at the heart of this process, dealing and negotiating with both buyer and investor, organising case files and technical reports, protecting rights, controlling costs and adding value.

News items such as ‘Conflicts over land in India stall projects worth billions of dollars - http://www.thisisplace.org/i/?id=9bce5bf2-36c5-48e7-b6fc-170d83713a63 from the Thomson Reuters Foundation initiative ‘Place’ highlights how an analysis of 289 cases, making up 40 percent of major land conflicts in India, found they affected 3.1 million people and more than $178 billion of investment. Other news items on ‘Place’ such as ‘Millions of cases stuck in Indian courts show need for ‘urgent’ land reform’ http://www.thisisplace.org/i/?id=5ef75520-0c63-4001-80b1-79deadc9c380 highlight how land is central to economic development in expanding economies such as India, Brazil, Indonesia and China and a major source of unrest and civil disruption.
Place is a wonderful resource for land issues and has helped bring back into focus the thoughts of Hernando De Soto – author of the seminal title ‘Mystery of Capital’. ‘There is no such thing as an investment without property rights that are negotiable and transferable’ stated De Soto http://news.trust.org/item/20160801040207-9yywk in a recent interview.

De Soto has outlined these issues for decades but the figures still have the power to make one take notice. De Soto states ‘Providing the world’s poor with titles for their land, homes and unregistered businesses would unlock $9.3 trillion in assets, an unprecedented sum to reduce poverty. Property titles would allow the poor to use their small homes or land in order to borrow money and start businesses, he said, unlocking the entrepreneurial potential of billions of people. There is no such thing as an investment without property rights that are negotiable and transferable.” These last two terms ‘negotiable and transferable’ are at the core of international land standards.

https://landportal.info/book/countries The Land Portal is another land focussed initiative that has been doing an enormous amount of work. The group has been investigating large scale land acquisition/investment (LSLA) and recently hosted an expert meeting in Cape Town, South Africa on fair compensation during the LSLA process. The Land Portal is an excellent online resource on land issues and is helping to highlight the growing importance of global land investments and the necessity for consistency in land transfer protocols and standards. International investors now view land as a valuable and potential secure asset. Land Portal state that - ‘International investors are injecting an unprecedented amount of capital in agriculture, biofuel production, mining, and forestry activities, thus suggesting that this wave of transnational land deals might constitute a development opportunity for low and middle income countries; On the other hand, the same wave of investments is putting at risk the livelihood of rural poor, local communities and indigenous populations affected by these land transactions, especially when customary tenure regimes are not – either de jure or de facto – formally recognised by local Authorities.’

To give some idea of the land mass being transferred –in the last 16 years 77.5 million hectares of land – a surface twice the land mass of Germany – has been transferred to international investors or is currently under negotiation. Over 130 countries are involved in this international market for land either as investor country, or as target country, or both. Sovereign Investment Funds, private companies, corporations, investment funds (Western European pension schemes for example) are all involved and all are looking for secure, low-risk return on investment.
The top 5 for concluded deals – Indonesia, Ukraine, Russia, Papua New Guinea and Brazil, Africa remains the most targeted region both in terms of number and area of the land deals. @land portal

Building blocks

It’s also important to think of Land Transfer standards through the prism of ‘fit for purpose’. In many cases land transfer efficiency is hampered by many of the issues highlighted within the recent Fit for Purpose Land Administration v2 – 2016 GLTN/FIG/UN Habitat report http://www.gltn.net/index.php/publications/publications/download/2-gltn-documents/2258-fit-for-purpose-land-administration. Weak institutions, inappropriate laws and regulations, high costs, complexity, lack of capacity, inadequate maintenance and long implementation time frames – land transfer and land value are strongly affected by these issues.

‘The FFP concept encompasses a dynamic interaction of the spatial, legal, and institutional frameworks and associated key principles for building these frameworks, in support of the overall land policy objectives.’ The FFP concepts has been largely accepted within land survey, mapping, the identification of parcels and establishment of FFP general boundaries and title. These FFP concepts now need to be applied within the context of value and valuation.

At previous World Bank Land & Poverty conference we have explored related issues of ‘is it possible to value informal/unregistered land & property – World Bank 2015 Prof France Plimmer & James Kavanagh’ and ‘is the establishment of value a precursor to land rights & tenure security – World Bank 2016 James Kavanagh, Prof Frances Plimmer & Chris Barlow’. We believe that valuation is now being seen as the critical element of the entire land tenure & property rights nexus that it has always been, our previous papers have now been built on within the 2016 conference with two major papers on ‘The Valuation of Unregistered Land: Case Studies from Ghana, Indonesia, and Peru Franklin Obeng-Odoom, Michael McDermott’ and ‘Introducing a Guide to the Valuation of Unregistered Land – GLTN/UN Habitat/FIG’. Both of these outputs underline not only that valuation of unregistered land & property is possible but that land titling and registration may not be the panacea for all ills that was previously thought, indeed land registration may not significantly add to the value of land but value can significantly add to the perception of tenure security and the ability to realise monetarisation and even
achieve fair compensation. To quote the NGO Namati ‘Namati’s partners’ field teams have reported that after undertaking the valuation activity, community members expressed feeling more cautious about agreeing to potential investments, more emboldened to demand benefits from land deals, and more adamant about imposing limits or restrictions on investors’ actions. Viewed in this light, the pilot exercise is proving to be effective at motivating communities to strengthen local governance and improve tenure security.’

Valuation and the attribution of value to land & property is a fundamental building block within the land transfer process and by extension to land acquisition/compensation and taxation. FFP principles can be applied directly to both land valuation and to land transfer, this principle is a fundamental tenet of the proposed ILMS land transfer protocol.

The FFP concept includes three interrelated core components that work together to deliver the FFP approach: the spatial, the legal, and the institutional frameworks. The spatial framework supports the recording of the way land is occupied and used. The scale and accuracy of this spatial representation should just be sufficient for securing the various kinds of legal rights and tenure forms recognised through the legal framework. The institutional framework is designed to manage these rights and the use of land and natural resources and deliver inclusive and accessible services.

The FFP approach includes four core principles for each of the three frameworks:

<table>
<thead>
<tr>
<th>Spatial framework</th>
<th>Legal framework</th>
<th>Institutional Framework</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visible (physical) boundaries rather than fixed boundaries.</td>
<td>A flexible framework designed along administrative rather than judicial lines.</td>
<td>Good land governance rather than bureaucratic barriers.</td>
</tr>
<tr>
<td>Aerial / satellite imagery rather than field surveys.</td>
<td>A continuum of tenure rather than just individual ownership.</td>
<td>Integrated institutional framework rather than sectorial silos.</td>
</tr>
<tr>
<td>Accuracy relates to the purpose rather than technical standards.</td>
<td>Flexible recordation rather than only one register.</td>
<td>Flexible ICT approach rather than high-end technology solutions.</td>
</tr>
<tr>
<td>Demands for updating and opportunities for upgrading and ongoing improvement.</td>
<td>Ensuring gender equity for land and property rights.</td>
<td>Transparent land information with easy and affordable access for all.</td>
</tr>
</tbody>
</table>

The key principles of the FFP approach.

Building blocks – FFP valuation

The purpose of valuation drives the basis and methodology used. The really big issues now seem to be large scale land acquisition and property/land taxation. Within the valuation process (and this is across the various methodologies used from comparable evidence to cost method), there is a split between physical inspection and desktop investigation. Valuers also speak about ‘assumptions and special assumptions’, a special assumption for instance could be a potential change to the planning zone in which the valued land sits. Land value can be based on a multitude of different variables; development land for example can be notoriously difficult to value, but is always function of purpose. Using the
example of land acquisition for infrastructure, there is a necessity to engage with the FAO VGGT principles of fair compensation and compulsory purchase and the FIG paper No. 54 compulsory purchase and compensation 2010.

16. Expropriation and compensation

16.1 Subject to their national law and legislation and in accordance with national context, States should expropriate only where rights to land, fisheries or forests are required for a public purpose. States should clearly define the concept of public purpose in law, in order to allow for judicial review. States should ensure that all actions are consistent with their national law as well as their existing obligations under national and international law, and with due regard to voluntary commitments under applicable regional and international instruments. They should respect all legitimate tenure right holders, especially vulnerable and marginalized groups, by acquiring the minimum resources necessary and promptly providing just compensation in accordance with national law.

16.2 States should ensure that the planning and process for expropriation are transparent and participatory. Anyone likely to be affected should be identified, and properly informed and consulted at all stages. Consultations, consistent with the principles of these Guidelines, should provide information regarding possible alternative approaches to achieve the public purpose, and should have regard to strategies to minimize disruption of livelihoods. States should be sensitive where proposed expropriations involve areas of particular cultural, religious or environmental significance, or where the land, fisheries and forests in question are particularly important to the livelihoods of the poor or vulnerable.

16.3 States should ensure a fair valuation and prompt compensation in accordance with national law. Among other forms, the compensation may be, for example, in cash, rights to alternative areas, or a combination.

FAO, VGGT

If we then look at the primary elements investigated during an appropriate ‘due diligence’ process needed to value land in this context (simplifying for the purposes of example and using the RICS GN Valuation of Rural Land):

- Title
- Occupancy including lease and rental information
  - Rights of access, use rights, extraction rights
- Spatial identification (mapping/measurement) including area – using FFP techniques
- Land use
- Land classification
- Spatial planning, where not a special assumption
- Comparable valuation information, if available
- Taxation/rating value, if available
- Environment considerations
- Disputes
- Condition of buildings
- Services
  - Contamination and hazardous substances;
  - Soil structure;
  - Condition of land drainage;
• Reliability of records provided.
• Potential future yields and sales (agri)

This FFP approach for valuation follows the three primary tenets of purpose, flexibility and incremental improvement, the accuracy of an appraisal can be built up over time (and improvement in availability of transaction information will help). Future access to a robust and transparent valuation transaction database will derisk the valuation process and allow a progression from fair value to market value in due course.

Moving onto compensation, we have been looking at some key tests for a FFP process and have settled on:

• Title (occupancy)
• Spatial data (inc boundaries and area)
• Valuation

If FFP can be utilised for the 3 elements above then its can also be extended to:

• Compensation

Building blocks - Connectivity with CPO/Land Acquisition/Compensation

Many emerging economies have had a history of state confiscation of private land along with state ownership and management of this land. This experience has framed the views of many post-communist governments. Having moved from command economies to market economies where the right to private property is enshrined as a key signifier of new freedoms there has been a reluctance to transfer back to the state the power to compulsorily acquire (eminent domain) private property even in the public interest. Experience with delegations from the land administration departments of emerging economies confirms the reluctance to introduce compulsory acquisition powers because of their association with previous totalitarian regimes. This paper is connected to the paper and presentation by Tony Mulhall - Compulsory Purchase Powers - Essential For Emerging Economies and repeats its core message that:

• Reluctance to introduce compulsory acquisition powers is now acting against the public interest in key infrastructure provision.
• Failure to introduce CPO powers will delay the provision of essential services for millions of people.
• Compensation should reflect existing market values rather than some form of state attributed ‘value’ as a way of ensuring equitable treatment of owners.
• Specialised and particular skills and behaviours among professionals handling such acquisition need to be enhanced to re-assure those whose land is being acquired.
The acquisition process also needs a clear and minimum level of information to add land transfer, establish some form of tenure security and ultimately provide fair levels of compensation for any land acquired. As already mentioned, ‘Fit for Purpose’ is not just for spatial measurement, it is also important that it is used for valuation/appraisal, land reporting and ultimately to aid compensation for large scale acquisition during compulsory purchase processes. Market value may be the end goal but in reality, and in all unregistered cases, land value may be more of a ‘fair’ value exercise. Compensation also contains five other heads of compensation:

- Severance
- Injurious affection
- Disturbance
- Special value to owner
- Solatium

The object of the exercise is to aid and de-risk the process of land investment and real property transfer. The establishment of ‘fit for purpose’ land reporting standards such as International Land Measurement Standards ILMS is one part of this narrative as is ‘fit for purpose’ appraisal/valuation and dispute resolution mechanisms.

Attempts to introduce conventional (western style) land administration solutions to close the security of tenure gap have lacked success due to weak institutions, inappropriate laws and regulations, high costs, complexity, lack of capacity, inadequate maintenance and long implementation time frames; these solutions are not solving the global land issues and in many cases are only strengthening the hold on land by the elite. New innovative solutions are required to build affordable, pro-poor, scalable and sustainable systems to identify the way all land is occupied and used.
International Standards

Since 2013, RICS has been working with more than 100 other professional and standards-setting organisations throughout the world to develop high-level international standards. Collectively, these organisations own the standards which are implemented by each organisation through their own professional guidelines. International standards coalitions are all essentially trying to do the same thing – derisk the transfer and investment information processes in land property and construction by building global coalitions to agree on and implement high level, consensus driven, and principles based standards. Land is no different but it is more political and the potential for conflict can be high. Land issues and ownership are central to human geography, identity, history and nationality with all of the complex issues that these subjects can bring.

After numerous debates and conference papers outlining the issues within the land transfer sector, the global land profession has come together to build a coalition focused on the production of a common, high level land transfer standard called ILMS (International Land Measurement Standard).

The ILMS coalition (which now stands at 30 members – Jan 2017) was launched at FAO (United Nations Food and Agriculture Organisation) HQ, Rome in June 2016 and has now formed an ILMS Standards Setting Committee SSC from nominated land experts from across the world. It is envisaged that the SSC will aim to produce a draft standard for consultation during late 2017 (with major presentations at World Bank Land conference March 2017 and FIG Helsinki June 2017). The SSC will focus on ILMS as the 'Minimum requirement to secure legal rights and enable efficient/secure transfer/transaction of land and property rights'.

It is agreed by the coalition that ILMS will be a strong international principles based standard, in the public interest, focused on key land information elements, as required to de-risk and aid the process of transaction and strengthen land tenure security, land rights, investment, government revenue raising and economic development.

At the 2015/16 World Bank Land conferences speakers outlined how this increasingly unacceptable risk in basic land transfer information undermines social/political cohesion, economic development and investor confidence. The World Bank highlighted how Environmental, Social and Governmental (ESG) indicators are being increasingly used by governments, international agencies, multinational corporations and investors. A good example of an existing set of standards is the sustainability standards produced by GRI https://www.globalreporting.org/standards/ which focus on economic, social and environmental reporting.

The indicator that is missing is Land. A high level international agreed land measurement standard could pave the way to the development of an specific ESG indicator on land reporting. Land issues are now enshrined within the UN Habitat III New Urban Agenda and within the new Sustainable Development Goals (SDG’s) http://www.un.org/sustainabledevelopment/sustainable-development-goals/ so the time is right and the global audience is there. The FAO Voluntary Guidelines on Responsible Land Governance VGGT continue to be embedded in global, regional and national legislation.
Without pre-empting the ILMS SSC, ILMS could potentially take the form of a basic ‘checklist’ of key land information reporting identifiers such as:

- Governance – use of principles of Voluntary Guidelines for Responsible Land Governance
- tenure security,
- legal registration,
- ownership including gender issues,
- basic land administrative data,
- land use,
- land classification,
- spatial planning,
- spatial identification (mapping/measurement),
- valuation,
- taxation/rating,
- environment/ecosystem,

Most high income nations will already be ILMS compliant (many countries include geometric, legal, physical, economic and environmental characteristics of a land parcel) but the major land transfer issues are in low/middle income nations. The ILMS standard seeks to engage all stakeholders in the land ownership, registration, measurement and transaction process. It will also help forge direct links between land professionals, legal advisors and financial reporting by derisking the land transaction process for all parties and implementing an agreed land information framework.

It is envisaged that future iterations of ILMS will become more targeted on specific issues such as mapping/measurement, development land, extractive industries and agricultural investment.

The graphic above highlights the disparity between the lack of global professional capacity and informal land and property in many parts of the world.

**How does ILMS combine with other initiatives?**

There is a void between the high level global ‘soft’ law and guidelines of the FAO Guidelines for the Responsible Governance of Land and Resources (VGGT) and the ‘hard’ technical implementation of land administrative systems such as the Land Administration Domain Model (LADM is a land admin software
toolkit) – the development of an agreed high level International Land Measurement Standard could help fill this void. LADM (and other data transfer initiatives such as Social Tenure Domain Model STDM) have really opened up land transfer technologies to many low/middle income countries and helped bring forward the concepts of ‘fit-for-purpose’ [http://www.rics.org/uk/news/journals/land-journal/land-journal-may-june-2016/](http://www.rics.org/uk/news/journals/land-journal/land-journal-may-june-2016/) as featured in May June 2016 Land Journal.

‘Fit-for-purpose’ is designed to help nations realise the inherent economic value of their land and property resources by implementing technical and policy processes that utilise appropriate and sustainable levels of technology, professional capacity and governance. ILMS can be linked directly to LADM through the addition of a data format module for land ‘valuation and taxation’. ILMS can drive the land transfer process for financial and legal purposes whilst LADM will record these elements in an ISO (International Standards Organisation ISO 19152:2012 LADM) format. Fit-for-purpose concepts will also help professional capacity building and training with an ever-growing need for technical surveyors and valuers (possibly one and the same). These para-surveyors are needed to build the appropriate formal land transfer and taxation systems for low/middle income countries.

ILMS coalition has also engaged with other important land initiatives such as the Open Geospatial Consortium OGC working group on Land Administration, UN Habitat Global Land Tool Network GLTN initiative on the valuation of informal land/settlements, the USAID/Thomson Reuters Land Matters initiative and the UK DfID LEGEND land project.

ILMS is linked into the Property Rights Index [http://internationalpropertyrightsindex.org/](http://internationalpropertyrightsindex.org/) This index measures the three main components of a sound property rights system: the Legal and Political Environment (LP), Physical Property Rights (PPR), and Intellectual Property Rights (IPR). ILMS is concerned with the Physical Property Rights (PPR) component. The PPR has three subcomponents: the Protection of Physical Property Rights, Registration of Property and the Ease of Access to Loans. For rural communities affected by agricultural investments, engaging with investors or governments is difficult when deals are opaque, land rights are contested, or power imbalances and other factors tilt the negotiating table away from land users. One common problem is a lack of equitable access to information about deals struck between investors and governments.

[Open Land Contracts](http://www.openlandcontracts.org) is an online repository of publicly available investor-state contracts for agriculture or forestry projects. The repository provides summaries and comparison tools to help make land investments more transparent and their accompanying contracts easier to understand. Through these features, the repository can empower communities to access, assess, monitor and advocate around contracts that affect them. Transparency is crucial during the land transfer process and the Open Land Contracts initiative provides a very welcome source of information to land user communities.

**Conclusions**

Land and property transfer and governance is ripe for abuse and corruption, Transparency International [www.transparency.org](http://www.transparency.org) have highlighted the reality of corruption and bribery within the land and...
property sectors. In Kenya, a 2010 raid uncovered thousands of land files locked in filing cabinets of public officials hoping to collect bribes, six in ten land transfers were viewed as corrupt. A study in India estimates that US$700 million worth of bribes are paid annually by users of the country’s land administration services. The effects of a lack of transparency can include increased difficulty in releasing the value of the land as an asset and a lack of awareness of land policies and legal frameworks that can undermine land tenure security and related increase in conflict and social unrest. The opaque nature of land administration systems and decision-making mechanisms exacerbates corruption by land officials, from petty corruption as citizens try to undertake transactions, to major political corruption in land management, such as the illegal sale or lease of state land by public officials. Finally, without information on the status and transfer of state-owned lands, intermediaries and communities have no way to advocate for protection of land rights or fight for unrecognized official rights.

A Land Administration System provides government with an infrastructure for securing land tenure rights, determining valuation and taxation of land, and managing the use of land and land development. It sits within the principles of responsible land governance and the overall framework of National land policies, however people drive markets and markets drive value. It is vital that land administration professional start to understand how land markets, value and transfer operate and work.

Despite the clear need for transparency in land governance, the data remains closed. New technologies such as Blockchain can help but land is an emotive and highly political sector which needs strong governance and an enforceable legal framework to help create public and investor confidence. ILMS is just one part of a very big global picture but it can fulfill a primary function in aiding the transparency, fair and secure transfer of land.

Frontpage from the PRI, it is no coincidence that the top ten countries are the top ten richest nations
References

- **LADMOntology.owl**: Representing Roles in Formalizing Domain Ontology for Land Administration (to be presented by Kean Huat Soon at the International FIG workshop on the Land Administration Domain Model 24-25 September 2013, Kuala Lumpur, Malaysia).
- **UN Habitat Social Tenure Domain Model (STDM)**, a pro-poor land rights recording system [http://stdm.gltn.net/](http://stdm.gltn.net/)
- **UN FAO Open Source Software Project – FLOSS Solutions for Open Land Administration (SOLA)**. LADM is the starting point for this software. Enterprise Architect file within the documents on [http://www.flossola.org](http://www.flossola.org).
- **Addis Ababa: The Road Map to Progress through Securing Property Rights with Real Property Registration System** by Tarek Zein (Hansa Luftbild) and Zerihun Amdemarian Berisso (City Administration of Addis Ababa), World Bank conference, April 2012, [http://www.landandpoverty.com/agenda/pdfs/paper/zein_full_paper.pdf](http://www.landandpoverty.com/agenda/pdfs/paper/zein_full_paper.pdf)
- **FIG PUBLICATION NO. 54 - Compulsory Purchase and Compensation** [http://www.fig.net/resources/publications/pub54/pub54.asp](http://www.fig.net/resources/publications/pub54/pub54.asp)
- **International Valuation Standards IVS 2016** – [https://www.ivsc.org/](https://www.ivsc.org/)