

Can the MapMyRights Initiative be a Game Changer?

Robin McLAREN, United Kingdom

Key words: citizen empowerment, crowdsourced land rights, land administration, global land rights infrastructure, mobile devices

SUMMARY

The pressure to change and provide more appropriate and efficient land administration services and strengthen security of tenure is growing within global political circles. Land was prominent on the agenda for the G8 and G20 meetings in 2013 and global land indicators are planned within the replacement of the Millennium Development Goals. The ability of the current land administration paradigm to quickly scale up to engage the excluded 75% of the world's population is impossible; there are simply insufficient land professionals. It is time to radically rethink how we record and manage land rights.

The MapMyRights (MMR) initiative is reacting to these challenges by proposing a radical new approach by providing a free to use, transparent, global platform where citizens can record evidence of their land rights. The proposed solution is based on global cloud based platforms, ISO land information standards, mobile technology and participatory / crowdsourcing techniques to capture and maintain land rights. This paper describes the objectives of MMR, identifies the interventions required to achieve the goals, details the governance arrangements to stimulate the evolution of an MMR ecosystem and highlights scenarios of its potential impact across the land sector as a game changer.

Can the MapMyRights Initiative be a Game Changer?

Robin McLAREN, United Kingdom

1. INTRODUCTION

The current solutions to delivering land administration services have very limited global outreach; 75% of the world's population do not have access to formal systems to register and safeguard their land rights. The majority of these are the poor and the most vulnerable in society and without any level of security of tenure they constantly live in threat of eviction. For example, foreign investors through large scale land acquisitions (agriculture) have attained 83 million hectares of land (RRI, 2013) in largely poor and middle-income countries since 2000; many indigenous people have lost rights to their land. This creates significant instabilities in societies and severely limits their ability to participate in economic development.

The pressure to change and provide more appropriate and efficient land administration services and strengthen security of tenure is growing within global political circles. Land was prominent on the agenda for the G8 and G20 meetings in 2013 and global land indicators are planned within the replacement of the Millennium Development Goals. The ability of the current land administration paradigm to quickly scale up to engage the excluded 75% of the world's population is impossible; there are simply insufficient land professionals. It is time to radically rethink how we record and manage land rights.

The MapMyRights (MMR) initiative is reacting to these challenges by proposing a radical new approach by providing a free to use, transparent, global platform where citizens (as well as stakeholders who are interested in driving forward property rights, e.g. government and the private sector) can record evidence of their land rights. The proposed solution is based on global cloud based platforms, open source collaborative platform to support Apps, predominantly ISO land information standards, mobile technology and participatory / crowdsourcing techniques to capture and maintain land rights (McLaren, 2011). This paper will describe the objectives of MMR, identify the interventions required to achieve the goals, detail the governance arrangements to stimulate the evolution of an MMR ecosystem and highlight scenarios of its potential impact across the land sector as a game changer.

2. MMR VISION

The vision of the MMR initiative is to support indigenous people, local communities and citizens to directly capture and record evidence of their land rights and other resource rights and to post their evidence on a global platform that is secure, free, open and transparent to all.

This vision will be supported through the creation an ecosystem of stakeholders that will facilitate the provision of advocacy, capacity, funding, research, global land rights management infrastructure, access to geospatial datasets and easy to use land rights capture

and management tools (Apps). Community of developers and researchers around open source will evolve to create Apps to support land rights capture and management on the MMR platform. The solution is primarily aimed at the 75% of the world's population that have no or inadequate security of tenure.

3. KEY INTERVENTIONS TO ACHIEVE MMR VISION

The MMR initiative will facilitate the following interventions across the land sector and beyond:

– **Support of Fit-For-Purpose Approach**

More appropriate and lower cost approaches to capturing land rights will be encouraged through the adoption of 'fit-for-purpose' approaches and the provision of tools for these innovative approaches. Fit-for-purpose means that the land administration systems – and especially the underlying spatial framework of large scale mapping - should be designed for the purpose of managing current land issues within a specific country or region - rather than simply following more advanced technical standards. The fit-for-purpose approach is participatory and inclusive – it is fundamentally a human rights approach. Benefits relate to the opportunity of building appropriate land administration systems within a relatively short time and for relatively low costs. The fit-for-purpose approach being proposed here offers governments and land professionals the opportunity to make a significant improvement in global land issues. It is a realistic approach that is scalable and could make a significant difference in the intermediate timeframe.

The term "Fit-for-purpose" is not new at all, but what is new is relating this term to building sustainable land administration systems. Therefore, the approach used for building land administration systems in developing countries should be flexible and focused on citizens' needs, such as providing security of tenure and control of land use, rather than focusing on top-end technical solutions and high accuracy surveys. A fit-for-purpose approach includes the following elements (FIG/World Bank, 2014):

- **Flexible** in the spatial data capture approaches to provide for varying use and occupation.
- **Inclusive** in scope to cover all tenure and all land.
- **Participatory** in approach to data capture and use to ensure community support.
- **Affordable** for the government to establish and operate, and for society to use.
- **Reliable** in terms of information that is authoritative and up-to-date.
- **Attainable** in relation to establishing the system within a short timeframe and with available resources.
- **Upgradeable** with regard to incremental improvement over time in response to social and legal needs and emerging economic opportunities.

The MMR initiative and the use of mobile technology will directly support and accelerate the implementation of the Fit-For-Purpose approach.

– **Provision of a Global Infrastructure Platform to Manage Evidence of Land Rights**

A global platform that is secure, free, open and transparent to all will be facilitated by partners. The strategy for the technology of MMR is to create an 'architecture of participation', building on leading geospatial infrastructure and extending existing collaboration communities. This will leverage an existing core geospatial platform to provide the base web mapping infrastructure and a collaboration platform will be built on top; all in open source software. Further details are contained in section 4.

– **Access to Global and Local datasets for Contextual Information**

Free access to global and local datasets, especially high resolution satellite imagery, open street maps, topographic mapping and existing land information, to provide the context for recording land rights will be negotiated with suppliers. The MMR infrastructure will provide some of these, as well as hooks to integrate an even wider variety of complementary data.

– **Build Capacity to Capture Evidence of Land Rights**

The key bottleneck in land administration services is the use of traditional, high accuracy, expensive land surveying techniques to record land rights. However, trusted intermediaries will be trained to capture evidence of land rights through engagement with Land Professionals and sharing resources with other information services, e.g. health, financial and agriculture services. This will ensure that capacity evolves and scales across communities and professions. This approach provides a significant opportunity for land professionals to react positively to these global land policy agenda challenges.

– **Formalize Crowdsourced Land Rights**

Although crowdsourced land rights posted on a global, transparent infrastructure will provide communities and citizens with a certain level of security of tenure, it is the ambition of MMR to migrate these crowdsourced land rights to formal land rights accepted by governments. MMR will engage with National Land Registration and Cadastral Agencies wherever possible to define new processes to formalize crowdsourced land rights.

– **Build a World Class Research and Practitioner Global Network**

The ultimate success of MMR will depend on engaging and building a series of motivated communities into an overall MMR ecosystem. The range of communities will include: citizens, NGOs / CSOs, academia, open source software developers, professional bodies, donors / partners, Value Added Resellers and commercial service users. Each of these communities will require different forms of engagement under an overall MMR engagement strategy. A key element of the ecosystem will be the

creation of a world class research and practitioner global network to support knowledge sharing.

4. GLOBAL MMR TECHNOLOGY INFRASTRUCTURE

The strategy for the technology of MMR is to create an 'architecture of participation', building on leading geospatial infrastructure and extending existing collaboration communities. This will leverage an existing core geospatial platform to provide the base web mapping infrastructure (land rights, base maps, geocoding, core Application Programming Interface [API's]). On top of that will be the MMR collaboration platform, built in an Open SaaS (Software as a Service) model - open source software powering a central repository. These two components together make the 'MMR Infrastructure' that developers will code against and all users will interact with through a variety of applications. See Figure 1.

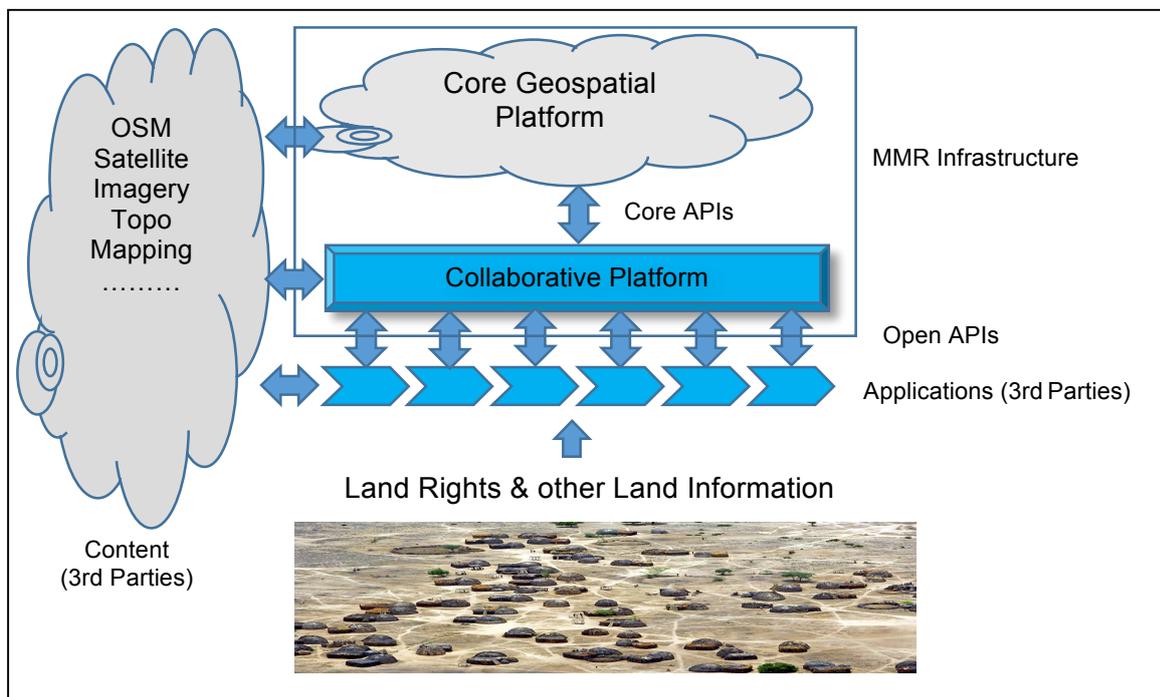


Figure 1: MMR Infrastructure Architecture

The core geospatial platform will be where all the land rights and additional land information is stored. The goal is to enable anyone to interact with and contribute to that core data. The key to this is the 'architecture of participation', which is the community plus the technology, evolving together. Wikipedia and OpenStreetMap have both created successful architectures, where the tools are enhanced to support the community, and the community grows as the tools get better. Everyone collaborates on the same data for different purposes, driven by different incentives, but the core is a commons that all naturally contribute to.

The primary way that the majority of people will interact with the MMR infrastructure is through applications, mobile, web-based and even desktop. Many of these will not be entirely new applications, but existing software that is adapted to work with MMR. This will be possible by building the API's on top of open, international standards as much as possible. The resulting applications will be both proprietary and open source, primarily built by third parties. The code powering these API's will be open source, to enable further innovation and experimentation by third party collaborators. The API's will also tap into other existing content, like satellite imagery, open street maps, topographic mapping and existing land information. The MMR infrastructure will provide some of these, as well as hooks to integrate an even wider variety of complementary data.

Data security, access and permissions are very sensitive issues when exposing land rights to a global audience. MMR will provide an easy to use and understand licensing model that will walk users through the options at set up. Users will be able to control what data are made available and to determine who can view and edit their data. Data cannot be used without users' express written consent, e.g. through Free, Prior, Informed Consent (FPIC), for example.

The open API's will help cultivate the developer ecosystem, and an open source collaboration platform will enhance that more. Seamlessly tapping into other open infrastructures, like OpenStreetMap and the open source geo software world, and contributing to them where possible, will go a long way to ensuring a robust developers' community. If the pieces come together right and the core geospatial platform and collaborative platform show enough potential then MMR will be able to grow into a true infrastructure, becoming bigger than any single player could build alone. MMR needs to scale quickly and is big enough that a massive online collaboration is the only way to successfully tackle it, and we believe the open architecture of MMR gives that the best chance of happening.

5. BUILDING ON EXISTING PARTICIPATORY EXPERIENCE

A significant number of NGOs are currently capturing land rights information and gaining significant experience in their field experiences. The NGO's include:

- International Land Coalition (ILC) global dataset of land deals, Matrix 2 (<http://landmatrix.org/>).
- Stakeholder Democracy (SDN) working in the Niger Delta in Nigeria (<http://www.stakeholderdemocracy.org/>).
- Spatial Collective is a social enterprise that develops innovative tools to support collective action and address issues from a spatial perspective – exploring how trends relate through space, place and time (<http://www.spatialcollective.com/>).
- Munden Projects and the Ford Foundation with their Dryad project to support community forest enterprises (<http://www.mundenproject.com/>).
- Rights and Resources Initiative (RRI) is a global coalition of organizations working to encourage forest land tenure and policy reforms and the transformation of the forest economy so that business reflects local development agendas and supports local

livelihoods. RRI works at the country, regional and global levels, collaborating on research, advocacy and convening strategic actors (<http://www.rightsandresources.org/>).

- In order to build resilient societies, policy-makers and the public must have access to the right data and information to inform good decisions: such as where and how to build safer schools, how to insure farmers against drought, and how to protect coastal cities against future climate impacts. Sharing data and creating open systems promotes transparency, accountability, and ensures a wide range of actors are able to participate in the challenge of building resilience. The Open Data for Resilience Initiative (OpenDRI) aims to reduce the impact of disasters by empowering decisions-makers with better information and the tools to support their decisions (<https://www.gfdr.org/opendri>). The initiative has produced a set of guidelines on best practice on community mapping (World Bank, 2012).

However, several of the NGOs are individually attempting to create appropriate ICT infrastructures to manage and to provide access to their captured land rights information – this is proving expensive and generating silos of land rights information. A new common infrastructure approach is required that allows the NGOs to concentrate on their core business; the MMR infrastructure is being considered as an alternative to creating or maintaining their own.

6. GOVERNING AND LEADING MMR

The MMR initiative will be governed through a newly established MMR Foundation (MMRF). The legal entity will reflect both the provision of public good infrastructure (social business) as well as providing opportunities for revenue generation. Lessons learned from OpenStreetMap, MySociety.org and other related foundations will be adopted. It is expected that the MMRF legal entity will be established in the UK during April 2014.

The MMR initiative will only work effectively if it can attract a wide range of partners to support implementation of the MMR vision. These partners will include, for example:

- Foundations;
- Bi-lateral Aid or similar;
- Academic Institutions;
- NGO / CSO Field Operators;
- National Mapping & Cadastral Agencies (NMCAs);
- Geospatial Data Providers;
- Not-for-profit organizations providing information tools and services to support international development could be used to market and sell MMR services;
- Multi-National Companies; and
- Technology / Mobile Phone Companies.

7. MMR IMPACT ON THE LAND SECTOR

MMR is highly disruptive and will have the potential to invoke significant change across the land sector. The type and extent of this impact will vary from country to country depending on the prevailing culture, effectiveness of existing land governance, openness of land professionals to change and demand for alternative solutions to improving security of tenure. This section of the paper provides predictions on this impact through a series of scenarios to highlight MMR's role as a game changer.

7.1 MMR Becomes the Preferred Platform for Recording Evidence of Land Rights

The recording of evidence of land rights on MMR is eventually preferred and trusted by the majority in a country since the alternative formal land administration system is controlled by those in positions of power.

Despite not having the usual endorsement and guarantee from government, MMR's legitimacy may progress over time as quality and trust evolve. It may even be embraced by the informal market as a trusted repository to support transactions more affordably and effectively than the formal property register. The real test will be if financial services use it to judge risk in the mortgage market. Ultimately, it may either replace the government land administration service, reinforcing the informal land market, or be adopted by government once it has reached a critical mass and quality.

7.2 MMR is Quickly Adopted by Governments to Record Evidence of Land Rights

Progressive countries quickly adopt the fit for purpose approach and use MMR to stimulate citizens to record initial evidence of land rights and the land administration agency designs a migration route for crowdsourced land rights to be formalized.

Some countries may embrace this new model as an opportunity to accelerate the number of properties being registered across the country and support a much more inclusive solution to land administration. If land professionals work in partnership with citizens and communities and grow a network of trusted citizens /para-surveyors to record evidence of land rights then this source of land information could be managed directly by the formal property registers. Initially these crowdsourced records could have a provisional status that would be formalized following checks on authenticity. This could be performed directly by land administration staff or preferably accepted directly from trusted community experts providing societal evidence of community acceptance. The approach to and judgment of authenticity would evolve and improve over time, just as has happened with the maintenance of all wikis. This would involve a changing role for land professionals, working with citizens rather than for citizens. Consequently the new role of land surveyors will be for capacity building, enabling technology and land information flow and quality control, but not primarily for field work where daily allowance and transport to and in the field normally account for over 50 percent of the cost for land registration.

7.3 MMR is Totally Rejected by Governments to Record Evidence of Land Rights

The land administration authority and the surveying profession perceive MMR as a threat and resist its operation in a country.

Just as some countries restrict open access to the Internet, countries may oppose the introduction of the open and transparent MMR repository for registering evidence of land rights. The elite and the rich who have total control of the land market and access to land through the formal land administration services have too much to lose and will close ranks to ensure that MMR does not democratize land rights. MMR will also be perceived as a threat to land professionals who will defend their professional domain and refuse to cooperate with the MMR initiative.

8. MANAGING RISKS ASSOCIATED WITH MMR

The potential risks associated with MMR's operation will be identified and approaches to mitigating those risks described. Some of the key risks include:

- **Land Professionals are very conservative in nature and will not adapt to this new paradigm that requires a new partnership with citizens.**

Mitigation: This new partnership model implies that land professionals will have a different relationship with citizens or 'pro-amateurs'. The increased collaboration with citizens opens up the opportunity for new services to train citizens and community intermediaries and to quality assure their crowdsourced information. It should therefore not be perceived as a threat to their livelihoods and profession. But will land professionals accept this new role and will sufficient citizen entrepreneurs provide land rights capture services and become trusted intermediaries? Disruptive technologies have and will continue to challenge the relationship between 'pro-amateurs' and land professionals, but these drivers of change also present significant opportunities for all stakeholders.

- **Crowdsourcing will just reinforce the informal land market.**

Mitigation: There is a danger that the emergence and acceptance of crowdsourced land rights information by citizens will just reinforce the informal land markets in countries where there is ineffective land governance, poorly performing land administration systems and weak formal land markets. Lack of trust in the formal land administration system will persuade citizens to try crowdsourcing alternatives that are attractive due to their transparency and citizen involvement. The final outcome of the informal or formal market will depend primarily on the Land Administration agencies' reaction to crowdsourcing and whether they reject or embrace it. This is why Land Administration agencies should be directly involved in the early pilot projects.

- **Openness will lead to more corruption in the land sector.**

Can the MapMyRights Initiative be a Game Changer?, (7030)
Robin McLaren (United Kingdom)

9/11

Mitigation: Data collected by the public must be validated in some way; otherwise the crowdsourced information is open to abuse, and in the case of land rights, corruption through false claims. However, transparency and societal evidence, which is at the heart of the crowdsourced philosophy and the increasing use of the mobile phone to check authentication, should support the fight against corruption. However, there is always a danger that the ‘elite’ hijack the MMR initiative just as they have with the formal Land Administration Systems. The MMR initiative needs to be vigilant and identify misuse before it becomes widespread.

– **Crowdsourced land rights information can’t be sufficiently authenticated.**

Mitigation: One of the most contentious issues surrounding crowdsourced information is the authenticity or validity of the information provided. Without the rigors and safeguards associated with formal professional and legal based processes, crowdsourced information is of variable quality and open to potential abuse. The pilots will use a variety of authentication techniques, including the use of trusted intermediaries, local land committees and societal evidence, to determine a set of authentication tools.

– **Land rights information is too sensitive to expose on a global platform.**

Mitigation: Many communities under threat may feel uncomfortable with recording their land rights on a global platform and allowing total transparency. The MMR solution has to be sensitive to this privacy requirement and will provide functionality to allow users to define access rights to specified groups.

9. CONCLUSIONS

The aim of the MMR initiative is to enable citizens and communities to protect tenure interests and encourage them to engage in more formalized systems, where greater protection and opportunities are available; for those with no rights it will generate security of tenure and for those with customary rights it will create opportunities to engage in the land market.

By coalescing communities of interest across the land sector into a sharing and caring ecosystem, MMR plans to facilitate the development of a new generation of land information capture and management tools, aligned with citizens’ and NGOs’ needs, which will transform the land sector and significantly increase its outreach to the majority that don’t have any means of increasing their security of tenure.

There are some serious risks involved on this MMR journey, but if the key stakeholders in the land sector are not willing to face these risks and embrace serious change then a large proportion of the world’s population will continue to live with insecurity of tenure, the constant threat of eviction and be trapped in poverty.

REFERENCES

Can the MapMyRights Initiative be a Game Changer?, (7030)
Robin McLaren (United Kingdom)

10/11

FIG Congress 2014
Engaging the Challenges – Enhancing the Relevance
Kuala Lumpur, Malaysia 16-21 June 2014

FIG / World Bank (2014). 'Fit-For-Purpose Land Administration'. Joint publication of FIG / World Bank, FIG publication no 60, FIG Office, Copenhagen, Denmark, (published March 2014).

McLaren, R., (2011). 'Crowdsourcing Support of Land Administration – a Partnership Approach'. Retrieved from <http://www.rics.org/uk/knowledge/research/research-reports/crowdsourcing-support-of-land-administration/> (Last accessed 18 February 2014).

RRI, (2013). 'Social and Environmental Impacts of Agricultural Large-Scale Land Acquisitions in Africa—With a Focus on West and Central Africa'. Retrieved from http://www.rightsandresources.org/documents/files/doc_5797.pdf (Last accessed 27 February 2014).

World Bank, (2012). 'How-To Notes – Getting on the Map: A Community's Path to Better Services'. Retrieved from <http://www.opendta.org/documents/how%20to%20-%20interactive%20mapping%20draft.pdf> (Last accessed 18 February 2014).

BIOGRAPHICAL NOTES

Robin McLaren is director of Know Edge Ltd a UK based, independent management consulting company formed in 1986. The company supports organizations to innovate and generate business benefits from their geospatial information. Robin has supported national governments in formulating National Spatial Data Infrastructure (NSDI) strategies. He led the formulation of the UK Location Strategy and has supported similar initiatives in Kenya, Hungary, Iraq, Western Australia and Canada. He has also supported the implementation of the EU INSPIRE Directive in the UK and was a founding member of the UK Location Council. Robin is also recognized as an expert in Land Information Management and has worked extensively with the United Nations, World Bank and EU on land policy / land reform programmes to strengthen security of tenure and support economic reforms in Eastern and Central Europe, Africa, Middle-East and the Far-East. His recent research focuses on the innovative use of crowdsourcing to support citizens in directly capturing their land rights.

CONTACTS

Robin McLaren
Director
Know Edge Ltd
33 Lockharton Ave
Edinburgh EH12 1AY
Scotland, UK
Tel: +44 (0) 7803 163137
E-mail: robin.mclaren@KnowEdge.com
Web: <http://www.KnowEdge.com>