

Opportunities for Female Land Surveyors in Emerging Economies

Emem ISANG, Nigeria, Anne GIRARDIN, France, Madaleine WEBER, USA

Key words: Women, Land, Surveyor, Empowerment, Fit-For-Purpose

SUMMARY

Land administration is generally the responsibility of governments. But in emerging economies, the lack of financial and human resources prevent many governments from building and maintaining comprehensive land registries and cadastral systems. Typically, only the wealthiest people have the means to navigate a cumbersome and expensive government bureaucracy in order to acquire legal titles and secure their land tenure. The most vulnerable people often rely on commonly unrecorded informal and/or customary practices and these land management practices most acutely affect women. In many societies, even if women inherit land from their fathers, and even if they have the financial capacity to register their land, women are not recognized by men as landowners. Furthermore, women often lack knowledge about their rights, face male-dominated land agencies, and even in instances where women can register their property in their name, the process is often hijacked by male relatives. However, research has established that secure land rights increase productivity by as much as 50 percent, doubles the rate of high-school graduation, and increases environmental conservation. This impact is even more pronounced when women gain secure rights to land.

The lack of female intermediaries to facilitate the formalization of tenure for female landowners actually creates an opportunity for women land professionals in emerging economies that might be more trusted by female headed households than their male counterparts. At the moment, there are no clear global figures regarding the number of female surveyors or cartographers and their proportion in regards to men, but it is certainly still a profession that is highly dominated by men. In certain areas of the world, it is a necessity to involve women in the land documentation process to enter homes, if accurate and unbiased data is to be collected. Women are also essential in certain conflict resolution projects related to women and inheritance, so why not involve them in the entire registration process? Women can talk to other women more easily and are often seen as having more empathy. And when it comes to using the tools and applying a process, women are also more detail oriented and thus accurate than men.

Women surveying and mapping professionals will facilitate the empowerment of women in the global economy. By starting with a pragmatic approach in training them to the use of the newest mobile technologies that allow them to collect land information and build local cadastral systems faster and at a fraction of a cost compared to traditional survey methods, it will help bridge the gap between women landowners deprived from land rights recognition and women full actors of economic development by having access to secured tenure. And by

having these newly qualified women surveyors join land professional organizations, they will have access to higher competences and eventually get job opportunities in the construction industry, urban and rural planning, or even conservation. Involving women in the land and surveying profession is essential, especially if we want to have women participate as full actors in the process of economic development.



Two community members learning how to become para-surveyors using a smartphone and an external GNSS antenna to increase the positional accuracy in Luberizi, South Kivu, Democratic Republic of Congo.



Anne Girardin teaching two land survey and geomatic students from Kabul Polytechnic University in Afghanistan how to use a total station.

Opportunities for Female Land Surveyors in Emerging Economies

Emem ISANG, Nigeria, Anne GIRARDIN, France, Madaleine WEBER, USA

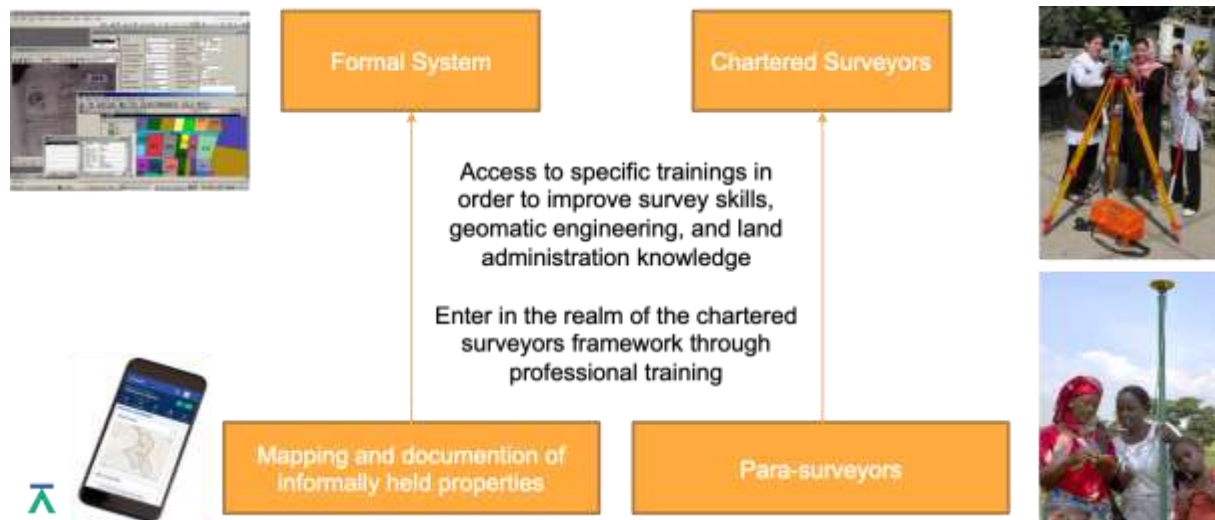
1. INTRODUCTION

Land administration is generally the responsibility of governments. But in emerging economies, the lack of financial and human resources prevents many governments from building and maintaining comprehensive land registries and cadastral systems. Typically, only the wealthiest people have the means to navigate a cumbersome and expensive government bureaucracy in order to acquire legal titles and secure their land tenure. The most vulnerable people often rely on commonly unrecorded informal and/or customary practices and these land management practices most acutely affect women. In many societies, even if women inherit land from their fathers, and even if they have the financial capacity to register their land, women are not recognized by men as landowners. Furthermore, women often lack knowledge about their rights, face male-dominated land agencies, and even in instances where women can register their property in their name, the process is often hijacked by male relatives. However, research has established that secure land rights increase productivity by as much as 50 percent, doubles the rate of high-school graduation, and increases environmental conservation. This impact is even more pronounced when women gain secure rights to land.

Over the past two decades, the development of remote sensing, the Global Network Satellites System (GNSS), and mobile technologies have changed the landscape of land documentation. Donor agencies have taken notice by developing simple digital tools to document land rights from bottom-up in an effort to reduce the time and cost of traditional documentation methods. Some of these tools include the UN-Habitat Social Tenure Domain Model (STDM), the FAO Open Tenure, the USAID Mobile Application to Secure Tenure (MAST), and the Cadasta Platform funded by the Omidyar Network and DFID. These new tools utilize land intermediaries such as para-surveyors to identify properties and collect land-related data and GIS technicians to help manage the collected data and review for overlapping claims and conflicts over land. Together, these intermediaries work to produce and manage information required for land formalization. Women, however, are still largely barred from accessing these intermediary professions, despite the fact that in certain areas of the world, women's involvement is required in order to enter homes or to solve conflicts related to women's land rights and inheritance.

At the moment, there are no clear global figures regarding the number of female surveyors and cartographers and their proportion to men, but it is certainly still a profession that is largely male dominated. The lack of female professionals is also a result of the difficulties that women face accessing secure land rights. In certain parts of the world, involving women in the land documentation process is required to enter homes, if accurate and unbiased data is

to be collected. Women are also essential in certain conflict resolution projects related to women and inheritance as they are seen as having more empathy and being able to talk to other women more easily. And when it comes to using the tools and applying a process, women are also known to be more detail oriented and accurate.



The need for female intermediaries in emerging economies presents an opportunity for women to become land professionals for both the formal and informal systems.

2. BECOMING A LAND PROFESSIONAL THROUGH THE FORMAL SYSTEM

1.1 Understanding the education requirements and barriers that women must overcome to become land professionals

Formal land administrations are formed by professionals (both public and private) that are typically trained in universities or dedicated schools such as the Ecole du Cadastre (Cadastral Schools) in many francophone countries. It typically takes two years to become a technician, five years to become an engineer, and seven years to become a chartered surveyor. All land professionals are trained in both the technical (topography, geodesy, GIS, etc.) and the legal (civil law, judicial law, administrative law, etc.) aspects of the profession. As such, it takes significant time and resources to become a qualified, experienced land professional through the formal system.

Because land surveyors were needed in the development of transportation networks and construction buildings, the land profession has historically been seen as a man's job. The heavy equipment and the often difficult weather conditions are often used as justifications to exclude women from the profession. Until now, very few women have become land professionals, and even when they do, they are often put in more administrative and legal

roles. But with the development of new lightweight technologies that reduce field time, the traditional barriers facing women are diminishing.

Technological advancements aside, the gender gap in education still prevails in emerging economies. Fewer females attend and finish high school than their male classmates and therefore have less of a chance to enter the profession, even if they wish to.

1.1 Lessons from Women In Surveying (WIS) Nigeria in Overcoming these Barriers

Founded in 1934, the Nigerian Institution of Surveyors is one of the oldest professional associations in Nigeria. In an attempt to support female surveyors, the Women in Surveying (WIS) Nigeria network was established in 2004 by Mrs. FK Omatsola, a female land surveyor. The network now has over 500 members and has inspired other WIS groups in Africa (WIS Ghana was established in 2012 by Mrs Angela Etuonovbe) as well as worldwide.

In Nigeria, women have been trailblazers in the field of surveying, both nationally and internationally. These trailblazers include Mrs. Olayinka, the first female surveyor general of Nigeria.

Women in Surveying Nigeria is committed to:

- Empowering and encouraging girl children through its project [“catch them young”](#),
- Upholding the ethical practice of surveying and mapping profession,
- Encouraging professional integrity of women,
- Economic empowerment of women and poverty alleviation,
- Sensitizing the general public on the need to engage the services of surveyors to prevent developmental errors, save time and money,
- Promoting the economic, social, political and professional growth and development in the society.

WIS is the only institution that caters exclusively to the needs and challenges of the female surveyors in Nigeria. It has become a beacon of hope to young Nigerian girls to prove to them that with hard work, nothing is impossible. It has helped to break down social barriers in a heavily male dominated work environment.

The “catch them young” program has helped to educate, empower, and train young girls giving them the much-needed tools (both mentally and educationally) to succeed as land professionals. As an example, Emem Isang, the first female surveyor general in Akwa Ibom, and national secretary of WIS Nigeria for four years, has been involved in mentorship and training programs in Akwa Ibom which has helped produce a new generation of over 50 brilliant female surveyors and counting.

Regardless of various challenges faced, —including a lack of funding, infrastructure, technology, equipment, education, and male acceptance, as well as deeply embedded cultural

barriers—, WIS has been able to overcome and achieve great exploits in the surveying profession in Nigeria and the association has become a example of success.

But despite all these efforts, gender equality in the surveying world in Nigeria is not yet achieved.

1.2 Globalization of WIS

In looking at the success of WIS, the International Federation of Surveyors (FIG) and Winnie Shui, Chief Land Surveyor at Hong Kong Government (at the time part of the FIG Commission 1 and now president of Commission 1) made a presentation at the FIG Working Week in Bulgaria in 2015 promoting the network. Thus, FIG Working Group (Commission 1.2) Women In Surveying was created with one initial vector of actions: encourage women to become surveyors or join land professions in general. Since then, WIS groups are slowly being created in other parts of the world like in Australia and New Zealand.

A WIS meeting was held for the first time in 2018 during the FIG Congress in Istanbul, Turkey to discuss the way forward. Inline with the development of fit-for-purpose land administrations and recognizing that there was a need for female intermediaries to facilitate the formalization of tenure for female landowners in certain countries, a second vector of actions was laid down: support women in emerging economies to secure their land and resource rights.

Following the movement, the Francophone Federation of Surveyors (FGF) initiated the creation of a francophone WIS network during the annual congress in Rabat in November 2018. In early 2019, the French female surveyors created WIS France which is supporting the creation of WIS associations in Benin and Senegal. More progress is expected by April 2019 at the FIG Working Week in Vietnam. This global network of female surveyors should help coordinate actions and reach the Gender Equality Sustainable Development Goal.

3. BECOMING A LAND PROFESSIONAL THROUGH THE INFORMAL SYSTEM

1.1 Clearing the way for female land intermediaries

It would probably take all the land surveyors in the world 200 to 300 years to map the world's undocumented land. Given the overwhelming shortage and demand for land professionals worldwide, there is a clear need for a more pragmatic approach to involving and training women in the land documentation process. With the advent of easy-to-use mobile technologies, such as those offered by [Cadasta](#), women can now more easily collect land information and build local cadastral systems faster and at a fraction of a cost compared to traditional survey methods. These new female land intermediaries will help bridge the gap between those women with land rights and those without. And by making it easier for women to enter the land profession, we will also open broader economic and job opportunities for

these women and their families. Involving women in the land and surveying profession is essential, especially if we want to have women participate as full actors in the process of economic development.

1.2 Establishing WIS groups in emerging economies to provide a framework of intervention

Becoming a land professional through the informal system will require some attention in order to make sure that these newly trained practitioners comply with the fit-for-purpose best-practices established by FIG and World Bank in 2015 in the [Fit-For-Purpose Land Administration guide](#).

WIS groups are overseen by FIG Commission 1.2 to ensure coordination of actions and support between countries. Creating WIS groups in more countries would provide the needed framework to train new female practitioners and establish a means to bringing them into the profession at higher levels.

During the WIS meeting in 2018, male surveyors and land professionals were encouraged to join the movement in order to help develop the WIS concept and groups worldwide, especially in countries where women are currently absent from the land professions.

4. CHARTERED SURVEYORS AND NEWLY TRAINED FEMALE LAND INTERMEDIARIES WORKING HAND-IN-HAND

Today, despite widespread acceptance of the Fit-For-Purpose land administration guidance, we continue to subscribe to the idea that land documentation needs to comply with the traditional surveying methodologies of the formal systems, requiring fixed boundary mapping and therefore increasing the cost and the time of registration. But the growing recognition of customary tenure and women land rights' using general boundary mapping requires us to think differently.

We can learn and accomplish a great deal when female land intermediaries work hand-in-hand with chartered surveyors. While the female land intermediaries can focus on the land rights recognition process, conflict resolution mechanisms, or the recognition of women's land and resource rights and compliance with the Social Tenure Domain Model (STDM), the chartered surveyors can ensure that systematic surveys and the mapping of general boundaries using low cost instruments reach a defined spatial accuracy and comply with international standards such as the Land Administration Domain Model (LADM).

This cooperative arrangement will promote the exchange of experience between the two systems to help address the gaps between laws and community norms.

Let us draw on the success of networks like WIS to support women in becoming land professionals through a practical approach. There is still much to be gained from involving

women surveyors to push laws and policies forward to bring informally-held properties into the realm of the formal system.



5. ACRONYMS

DFID	UK Department for International Development
FAO	United Nations Food and Agriculture Organization
FGF	Francophone Federation of Surveyors
FIG	International Federation of Surveyors
GIS	Geographical Information System
GNSS	Global Network Satellites System
LADM	Land Administration Domain Model
MAST	Mobile Application to Secure Tenure
STDM	Social Tenure Domain Model
USAID	United States of America Agency for International Development
WIS	Women In Surveying

REFERENCES

Fit-For-Purpose Land Administration, FIG Publication N° 60, Joint FIG / World Bank Publication by Stig Enemark, Keith Clifford Bell, Christiaan Lemmen, Robin McLaren: <https://www.fig.net/resources/publications/figpub/pub60/Figpub60.pdf>

Opportunities for Female Land Surveyors in Emerging Economies (9981)
Anne Girardin (France), Emem Isang (Nigeria) and Madaleine Weber (USA)

FIG Working Week 2019
Geospatial information for a smarter life and environmental resilience
Hanoi, Vietnam, April 22–26, 2019

BIOGRAPHICAL NOTES

CONTACTS

Emem Isang, WIS Nigeria : emempeejay@yahoo.com

Anne Girardin, Cadasta: agirardin@cadasta.org

Madaleine Weber, Cadasta: mweber@cadasta.org

Cadasta

One Thomas Circle

Suite #700

Washington, DC 20005, USA

Phone: 202-380-9447 | 1.888.506.4441 (Toll-Free)

Opportunities for Female Land Surveyors in Emerging Economies (9981)
Anne Girardin (France), Emem Isang (Nigeria) and Madaleine Weber (USA)

FIG Working Week 2019

Geospatial information for a smarter life and environmental resilience

Hanoi, Vietnam, April 22–26, 2019