

Combining Administrative and Open Source Data for Monitoring Land Governance: Mapping Women Land Rights in the Context of UN's SDG in India

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Paper prepared for presentation at the "2017 WORLD BANK CONFERENCE ON LAND AND POVERTY" The World Bank - Washington DC, March 20-24, 2017

Abstract

Production, availability and accessibility of reliable data and statistics are of fundamental importance in monitoring and in taking evidence-based decisions for good land governance. The demand for data as evidence is increasingly focused to monitor global and national developmental status and targets. Implementation of intentionally agreed commitments like Sustainable development Goals (SDGs) influence data production and availability, and the development of national statistical capacities (OECD, 2015)¹. At the same time, it also challenges the countries towards production of internationally comparable data to induce fair comparability among nations. United Nations Statistics Division (UNSTAT), the nodal agency for monitoring the SDGs has also highlighted the key role of reliable data sets with adequate disaggregation and granularity in measuring progress around SDG targets. FAO's Voluntary Guidelines on the Responsible Governance of Tenure (VGGT) of Land, Fisheries and Forests in the Context of National Food Security (the "Guidelines", FAO, 2012²) outlines the importance of monitoring in achieving equity over land tenure and access.

With a long and diverse land tenure history, India has launched many progressive reforms around land laws and institutions to make land governance more inclusive and equitable and land information and records more transparent and accessible. However its assessment with respect to global best practices through use of World Bank's Land Governance Assessment Framework (LGAF) in 6 states conducted in 2014, indicate the need of improvements around different land dimensions including women land rights.

Secure and equitable land rights of women form one of the key indicators (Indicator 5 under Goal 1) of the post-2015 Sustainable Development Goals (SDGs). Gender equity has also been globally recognized as one of the ten core principles for implementation of the FAO's VGGT.

The Indian Constitution provides equal rights to both men and women. The post-independence era has seen many progressive reforms in land policies with a focus on redistributive justice and gender equity. Land is a state subject in India and many states have gone ahead with exemplary initiatives to ensure gender justice in their land governance frameworks. Movement towards good land governance outcomes is incumbent upon robust and regular monitoring mechanism of women land rights indicators across spatial (viz. administrative boundaries, land being a state subject in India) and temporal scales.

Over years, India has developed institutional capacity and considerably improved data production, accessibility and availability, around different land parameters. Available administrative as well as open source data collected, interpreted and reported by government and non-government agencies at state and national level provide seamless opportunities to monitor and improve land governance. They also enable scope of aligning national level statistics along with international standards and databases and induce comparison. Monitoring and reporting land-indicators is expected to provide a basis to systematically discover and identify good practice that can then be documented and disseminated across states, manage change, and gradually move towards a more performance-

¹ https://www.oecd.org/dac/POST-2015%20P21.pdf

² FAO, 2012. Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security, at <u>http://www.fao.org/docrep/016/i2801e.jdf</u>

based approach to improving land governance in India. Periodic monitoring is also imperative in the context of tracking global targets and goals viz. women land rights in the context of SDGs.

Under Target 5a of SDGs, which addresses the rights of women to economic resources and access to ownership of land, indicators are 1(a) Proportion of total agricultural population with ownership or secure rights over agricultural land, by sex; and 1 (b) share of women among owners or rightsbearers of agricultural land, type of tenure(UNSTAT, 2016)³. This monitoring require availability of periodic and reliable gender disaggregated data across administrative layers on 'agricultural land' (includes land used for farming, livestock and forestry activities) and 'agricultural population' (people living out of farming, livestock and forestry, with land rights or without). UNSTAT prescribes the data sources for this indicator to be LSMS-ISA and DHS surveys and National household income and expenditure surveys. FAO's Gender and Land Rights Database (GLRD) is already disseminating some of these available data.

In the context of gender-disaggregated land data, information in India are available through different databases, collected by different agencies with varied granularity, sampling intensity and periodicity, as survey, census, administrative data and digital online database.

Nation-wide surveys like National Family Health Survey (NFHS) reports gender disaggregated data on property rights including ownership of houses and even non-agricultural land. In India DHS used as NFHS. India Human Development Survey (IHDS) executed in 2005-06 and 2011-12 by a Consortium of American Universities, reports gender-disaggregated intra-holding agricultural land ownership, based on interviews with a nationally representative sample. LSMS was executed only once in 1997-98.

Census data like Population Census, Agriculture Census and Socio-Economic Caste Census (SECC) also indirectly reports information on agriculture land ownership and management, which can be used. Population Census carried out every 10 years, provide information on agriculture population. Agricultural Census records operational holdings data every fifth year, following the FAO Guidelines, reports land information in disaggregated form across gender, ethnicity (caste) and other socio-economic parameters for different administrative layers. For India, GRLD, uses Agricultural Census information on land holdings. SECC, done in 2011 provides land ownership data.

Administrative data include Annual Reports of State Land Departments and Judicial reports/ databases (viz. High Court database on land acquisition related cases). Online databases maintained by states under flagship program Digital India Land Record Modernization Program (DILRMP), which has been digitizing all spatial and textual land records. Availability of gender-disaggregated information has not yet universalized in India's Digitized Land Record programs implemented by states.

SDG indicator development and tracking has so far been limited to international agencies and country level practical actions are yet to begin. The availability of such potential data sources, provides India, a strategic advantage to advance the monitoring around the SDG indicator on women's land rights. The situation can also be leveraged to monitor and report women land rights indicators at state and sub-state level, providing opportunities for comparative appreciation and competition among land-administration units and departments, leading to better governance. However, there has been very limited initiative in this regard. Consideration of 'land' as a state

³ <u>http://unstats.un.org/sdgs/files/metadata-compilation/Metadata-Goal-5.pdf</u>

subject and associated complexity and bureaucratic inertia can be attributed as the *raison d'être* for lack of such efforts. The absence of a formal mechanism in India to monitor progress in land reforms in general, and gender equity in particular, may be one of the causes behind the entrenched inequity in land tenure governance. However, increasing attention on land governance at the state, national and global level, as a tool for sustainable development and efforts to make it better through transparent and evidence-based better land governance, have triggered initiatives in this direction.

In this direction, we have made an attempt to see if tracking and reporting of women land rights indicators in the context of SDG is possible through use of these administrative and open datasets. In this paper we provide a comparative appreciation of all the datasets especially the metadata and methodology along with a SWOT vis-à-vis reporting requirement of SDG indicator. Describing the heterogeneity and complementarity between these datasets, we also explore if individually or in combination, they meet the SDG requirements of reporting sex-disaggregated land indicator. This paper illustrates the spatial distribution and temporal trends around women land rights in India with state-wise and district-wise granularity along with their further segregation across ethnicity and socio-economic categories, using open source agriculture census database.

We also test the robustness of these indicators by comparing them with those reported in published micro-studies, based on primary data at state and sub-state levels as well as with those reported by another paper using IHDS database at aggregate country level. Lastly, we have tried to examine and analyze the link between the spatial and temporal variability of WLR and relevant policies and legal-institutional frameworks in the concerned states to see if there are correlations for informed policy-feedback and the scope to induce healthy competition among states for gender-equitable land governance.

Key Words: India, Metadata, Land Rights, SDGs, Women

1. Introduction

Production, availability and accessibility of reliable data and statistics are of fundamental importance in tracking progress, taking evidence-based decisions for effective policy making and implementation, and also to observe transparency and strengthen accountability. The demands for data is increasingly focused towards monitoring of global and national developmental status and targets and enable good governance. Implementation of intentionally agreed commitments like Sustainable development Goals (SDGs) largely influence data production and availability, and the development of national statistical capacities (OECD, 2015). At the same time, it also creates challenges in production of internationally comparable data to induce fair comparability among nations. The Independent Experts Advisory Group on the Data Revolution (IEAG) has acknowledged the crucial role of data for decision-making and monitoring. Data has a potentially revolutionary effect on economic analysis and policy making (Lenard and Rubin, 2013). United Nations Statistics Division (UNSTAT), the nodal agency for monitoring the SDGs has also highlighted the key role of reliable data sets with adequate disaggregation and granularity in measuring incentivize progress around SDG targets. Being a signatory to major international treaties, India has considerably improved data production, accessibility and availability over the years to ensure proper alignment of national level statistics and induce international comparison.

Secure and equitable rights over natural resources is globally seen as a precursor to the achievements of numerous global development priorities including poverty elimination, food security, rural development, gender equality and women empowerment etc. FAO's Voluntary Guidelines on the Responsible Governance of Tenure (VGGT) of Land, Fisheries and Forests in the Context of National Food Security (the "Guidelines", FAO, 2012) has also outlined the importance of monitoring in achieving equity over natural resources. Secured land tenure is essential for effective land use, investment, job creation, agricultural productivity, inclusive urbanization, cultural identity, biodiversity conservation and climate resilience and disaster preparedness.

In spite of a wide range of international declarations and covenants on gender equity and women empowerment, the growing disparity in land ownership is a cause of concern. The Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) reflects women's rights to land in ending poverty, achieving dignity for all and reducing gender based discrimination and violence. The inclusion of gender equitable and secure land rights of vulnerable groups in the recently endorsed UN's Sustainable Development Goals (SDGs) is a reiteration of its increasing importance and urgency in the global context. In the context of India, equitable rights in land resources are of paramount importance as 75 percent of the female workforce depends on agriculture for food and livelihoods. The Indian Constitution also provides equal rights to both men and women. Secure land rights of women have demonstrated enhanced agricultural productivity and building resilience among the small and marginal farmers, who constitute 75 percent of the farming community. FAO has reported that closing the gender gap in agriculture with women's access and ownership of land and productive assets, could raise total agricultural output in developing countries by 2.5 - 4 percent, thereby reducing the number of hungry people in the world by 12 – 17 % (FAO, 2011). In the absence of secure land titles, women are also unable to access markets, technologies, inputs, insurance and institutional credit (Rao, 2011 and Neetha, 2010).

Over the last few years, both central and state governments have made many progressive reforms to realize the goal of secure and equitable land tenure for all. Among them, the 2005 amendment to

Hindu Succession Act, 1956 is considered as a landmark legislation which created provision of equal right of daughters over ancestral properties.

Despite many progressive reforms around land laws and institutions; India's assessment with respect to global best practices through World Bank's Land Governance Assessment Framework (LGAF) indicate the need of improvements around different land dimensions. Movement towards good land governance outcomes is incumbent upon robust and regular monitoring mechanism of land indicators across spatial (viz. administrative boundaries, land being a state subject in India) and temporal scales.

India has traditions of collecting, maintaining and reporting land information through nation-wide surveys, census, administrative and judicial reports/ databases. Flagship program Digital India Land Record Modernization Program (DILRMP)⁴, has been promoting digitization all spatial and textual land records by supporting the states. They provide seamless opportunity for routine generation of data on key land indicators based on administrative data that is already available in the system or that can be generated at low cost to allow monitoring of progress on land governance on a regular basis.

Monitoring and reporting land-indicators is expected to provide a basis to systematically discover and identify good practices that can then be documented and disseminated across states. This would improve change management, and help gradually moving towards a more evidence and performance-based approach to improving land governance in India. Periodic monitoring is also imperative in the context of tracking global targets and goals viz. SDGs. However, there have been lack of attempts to report land-indicators at national scale. The framers of the SDGs expect that investments in improved data collection and monitoring at country level will produce data that provide incentives for governments to improve land governance performance and also greater readiness to engage with multiple stakeholders in data analysis and in achieving better understanding of the strengths and weaknesses of existing land governance policies and practices (UNSTAT, 2016).

It is increasingly realized that the impacts of legal and institutional transformations, directed towards improving women's land rights status need to be measured across political geographies for providing a feedback loop to policy and institutions. However, in the absence of any monitoring mechanism, the changes are largely underreported or unreported. It not only restricts technological penetration and use in collecting and collating data but also affects planning and implementation process. This implicates the compelling need to have a monitoring system to track changes in women land rights. Periodic monitoring and reporting of status of women land rights is expected to induce comparative appreciation and hence implementation of positive changes by the states. Regular measuring through use of administrative and survey data about their progress will inform governments and non-state actors about the impacts of such legislations on societal progress. In this direction, we have made an attempt to track and report the following two critical land indicators under target 5a of SDGs:

⁴ **Digital India Land Record Modernization Program** (DILRMP, earlier NLRMP), is a centrally-sponsored government scheme to promote digitization of land records. Incomplete universalization of land records digitization; lack of existing provision for recording gender parameter, even with intent⁴ and limitations in purposive data retrieval prevents, the computerized land records available through DILRMP, to be used for these indicators. In April, 2015, Department of Land Resources advised the states to introduce gender field for land owners in their property records. Considerable time and resources required to update and change the records and make them easily accessible for periodic monitoring.

1(a) Proportion of total agricultural population with ownership or secure rights over agricultural land, by sex;

1 (b) Share of women among owners or rights-bearers of agricultural land, type of tenure

The robustness of these indicators were tested by comparing them with those reported in published micro-studies. Attempts have also been made to link the spatial and temporal variability of women's land rights with the legal, historical, cultural, political and economic practices in the concerned states to see if there are correlations for informed policy-feedback and the scope to induce healthy competition among states for gender-equitable land governance.

2. Methodology

2.1. Identification of Potential Metadata Sources

UNSTAT prescribes the data sources as LSMS-ISA and DHS surveys and National Household Income and Expenditure surveys. With regards to women's land rights indicator, FAO's Gender and Land Rights Database (GRLD) is already disseminating some of these available data. While this SDG indicator is considered superior (UNSTAT, 2016) to the "share of female agricultural holders" available through agricultural census data as it provides intra-holding/household information and can be made available in a shorter time span, this indicator exists or can be derived only for 21 countries. For India, GRLD, uses Agricultural Census information on land holdings, as LSMS was executed only once in 1997-98 and DHS done as NFHS doesn't report land data. Besides Agricultural Census, India Human Development Survey (IHDS) and National Family Health Survey (NFHS) were found to have desired potential to augment periodic and effective monitoring of land rights indicators. Moreover, successful implementation of DILRMP across the country will made crucial contribution in land records management and monitoring. It was also found that other data sources particularly Population Census and Socio-Economic Caste Census have potential to play a complementary role in monitoring of land rights indicator (Table 1).

Potential data sources identified and analysed				Data chara	cteristics			
	Frequency of collection	Collecting Agency	Sampling method	Survey methodol ogy	Sample Size	Unit of Enumerati on	Disaggreg ation	Accessibili ty
Agricultur al Census	5 years	Agricultur al Census Division, Ministry of	Two stage sampling	Land data is re- tabulate d from	All villages in land record states ⁵ ,	Househo ld	Gender, caste, farm size etc.	Open

Table 1: Data sources with their characteristics

⁵ States and Union Territories where comprehensive land records are maintained

		Agricultur		Land	20%			
		e, Gol		Record	sample			
				States	villages			
				and by	in non			
				househol	land			
				d	record			
				enguiry	states ⁶			
				from				
				Non				
				Land				
				Record				
				States				
IHDS	2 rounds	National	Stratified	Door to	42,152	Individua	Gender,	Open
	conduct	Council of	random	Door	Househo	1	age,	
	ed	Applied	sampling	Intervie	lds		caste,	
	(2005-06	Economic		ws			mode	
	& 2011-	Research,					of	
	12)	University					acquisit	
		of					ion	
		Maryland						
NFHS	4 rounds	IIPS &	Stratified	Door to	568,200	Individua	Gender,	Open
	conduct	Ministry	random	Door	Househo	1	Age,	(report
	ed since	of Health	sampling	Intervie	lds		spatial	available
	1992-	and		ws	(NFHS 4)			in pdf
	1993	Family						format,
		Welfare						raw data
		(MOHFW),						is not
		Governme						publishe
		nt of India						d)
Populatio	10 years	Office of	Full	Door to	Total	Individua	Caste,	Open
n Census		the	Populati	Door	Populati	I	Gender,	(Availabl
		Registrar	on	Intervie	on		Religion	e in Excel
		General	covered	WS			,	format)
		and					Occupa	
		Census					tion	
		Commissi						
		oner,						
		Ministry						
		of Home						
		Affairs						
SECC	Conduct	Ministry	Full	Door to	17.91	Individua	Caste,	Open
	ed once	of Rural	Populati	Door	crore		Gender,	
	in 2011	Developm	on	Intervie	househol		Primary	

⁶ In States and UTs where comprehensive land records do not exist viz. Arunachal Pradesh, Goa, Kerala, Manipur, Mizoram, Meghalaya, Nagaland, Orissa, Sikkim, Tripura and West Bengal and the Union Territories of Daman and Diu and Lakshadweep

	ent	covered	WS	d	Source	
		in the			of	
		Enumera			Income	
		tion				
		Blocks				

After examining all the potential data sets relevant for monitoring women's land rights, we took an attempt to use Agricultural Census data for benchmarking the status of women's land rights (WLR) in India and compared the findings with that of other datasets/publications. Agricultural census which is carried by 135 FAO member countries following guidelines of World Programme for the Census of Agriculture (WCA), provides options of easy access to gender-disaggregated data on women's landholdings at different administrative levels, from tehsil to country, along with options for disaggregation across land size, ethnicity and land relations (namely tenancy), offers the potential of proxy administrative datasets for gender-based land rights monitoring. Using this data set, we have developed atlas of women land rights (based on operational holdings) in India with state and district wise granularity with further disaggregation across ethnicity (caste) and other socio-economic parameters. The only limitation is that it gives information on management rights instead of ownership rights. However, agricultural holders⁷ and landowners⁸ are often used interchangeably in the context of measuring women's land rights (FAO, 2015a). CGIAR research program on Policy, Information and Marketing (PIM)⁹, sees a great potential overlap between management/holding rights and ownership` where property rights are well defined. WCA-2020 has advised countries to record information on ownership rights along with management rights through the use of modern technologies.

2.2. Data extraction, tabulation and QGIS mapping

The data available in different formats were converted to excel format for tabulation, re-tabulation, cross-tabulation and analysed to generate indicator-wise state and district tables. Based on these indicators, thematic maps (with state and districts as units) by different indicators were prepared using QGIS, a free, open source Geographic Information System¹⁰ for better visualization and appreciation of women's land rights.

2.3. Analysis of trend and status with other datasets/complementary secondary review

The value of indicators arrived from the analysis were compared with primary data collected and reported by published research (research papers, theses and past studies) on women's land rights based on micro-studies to compare women's land rights status with that based on administrative macro data.

2.4 Analysis of factors influencing women land rights

Through a review of secondary literature and peer consultation, we have attempted to explore potential reasons behind this spatial and temporal variation around women's land holdings. The existing legal, historical, cultural, political and economic practices were reviewed and compared with

⁷ The operational holders of the land holding, who takes land use decisions, but may not own the land

⁸ The legal owner of the land

⁹ http://pim.cgiar.org/2015/11/20/how-sex-disaggregated-land-statistics-can-help-monitor-progress-of-the-new-sustainabledevelopment-goals/

¹⁰http://www.qgis.org; was earlier known as Quantum GIS.

the trend/status of women land rights, especially to create substantive evidence towards more informed gender-equitable policy and institutional reforms.

3. Results & Discussion

3.1. Potential use of metadata

The implementation of SDGs urgently demands for a comprehensive assessment of existing statistical capacity in the country. This will help us to identify key opportunities and challenges at the country level to improve data availability, access, timeliness and quality. While comparing with the global SDGs monitoring document, we found that India partially fulfils the expectations related to production of reliable data on land rights.

Data sources	Global expectation	Potential data sources available in India	Key observations
Administrative records reported by national land institutions	Should be compared with household surveys (for informal documents)	DILRMP	Pan India implementation of DILRMP will take some more time. Possible to monitor in states where digitization of land records has been completed.
Census and multi- topic household surveys conducted by National Statistical Agencies.	Should provide information for residential and non- residential land, on (i) the share of individuals with secure tenure rights ¹¹ ; and (ii) the share of individuals who perceive their rights to be secure ¹²	Agricultural Census, IHDS & NFHS (Household Survey)	Agricultural census provides information on agricultural lands. IHDS and NFHS report information on residential land. However, there is lack of harmonized data collection. Both have their own strengths and limitations. IHDS is carried out in rural areas. Various definitions or concepts (viz. secure tenure) need to be reviewed and standardised for enhancing data quality and utility.
Additional Sources (Ide	entified by UNSTAT)		
World Bank's "Doing Business" data	Option to include the number of individuals with registered land documents will be explored.		Carried out in cities. Collection of land tenure information is subjected to DILRMP implementation
wond Bank's multi-	A standard land tenure		wond Bank's Living Standard

Table 2: Global expectation on data sources and collection process vis-à-vis available data in India

¹¹ Secure tenure rights are meant to imply that rights are legally recognized and the subject as well as boundaries clearly identified

¹² Tenure is perceived as secure if the household does not perceive a risk of land use or ownership being threatened or disputed.

purpose household surveys in all IDA countries	module will be included in this effort.	Measurement Survey (LSMS) was executed only once in 1997-98.
Data sets developed by civil society, such as ILC, WRI, RRI and the private sector	Their contribution to measurement of land rights monitoring will be assessed.	Civil society and Private sector provide both micro and macro level datasets including qualitative information related to land governance. These data sources can immensely contribute to periodic monitoring of SDG. However, there is lack of coordination among Government, Civil Society and Private Sector.

The above mentioned datasets have their inherent strengths and weaknesses (Table 3). The DILRMP will take considerable time for modernizing land records pan India. The household surveys like IHDS, NFHS though produce desired information on land rights, are not able to address emerging needs of disaggregated data and information on all the desired parameters. They also presents only sample survey, which may not get acceptance by concerned government officials. In the absence of a common and standard land tenure module, it is very difficult to cross check the data sets around certain indicators. The NFHS, which incidentally reported women's land ownership figure in the fourth round of survey reports information on percentage of women owning land and/or house or with someone. Except spatial (viz. Rural/Urban), there is no disaggregation around age-group, ethnicity etc in NFHS. On the other hand, Agricultural census which meets the data disaggregation needs produce information on operational holdings and not ownership holdings. Table 2 and Table 3 further explain the state of available data sources in India.

		r			
Table 3: SWOT	Analysis	of existing	data	sources i	n India

	Strength	Weakness	Opportunity	Threat
DILRMP	Based on legal land records, reports plot level information on ownership; most of the states have digitized land records;	Data not available for most states; difficult to extract and report; May differ from actual situation as records are updated	Gol has directed all states to add 'gender' parameter; resurvey ongoing to update records; universalization expected soon under DILRMP aiming Titling	Gender parameter required to be added to millions of old records (viz. Odisha alone has about 14 million LR), which may take more time; LR updating will also be tedious
Agricultural Census	Legitimacy, granularity (up to tehsil level), periodicity (5 years) and disaggregation across ethnic and land size; all population coverage; based on verification of land records in 90% of	Reports 'Operational holding'; treat gender of head of household as gender of land holder	WCA ¹³ , 2020 proposed the collection of sex- disaggregated land ownership data; Existing procedure collects ownership data and re- tabulates, therefore, can be made available, if Gol agrees; scope of linking	Conflict with Land departments, in case reports paint a poor indicators; dwindling budget provision for the division

¹³ World Programme for Agricultural Census of FAO, which guides agricultural s census operations in 115 member states

	states along with that of actual status		with other databases viz. Census, IHDS and micro- studies to make the indicator more robust	
SOHI	Nationally representative statistically sound HH survey; reports plot ownership data (up to 3 owners per HH)	Data not available for 40% of districts; based on interviews	Availability of inheritance and tenancy data can be used to link women land rights to other dimensions	Acceptance of State and district land administration, data being based on interviews only; continuation of survey
LSMS/ DHS (NFHS)	Identified by UNSTAT and FAO as source for SDG indicator	Done once in India (1997-98) only for UP and Bihar India	State level household surveys can be organized in this line viz. Karnataka Household Asset Survey; Integrating land rights questions in NFHS	Acceptance of State and district land administration
Compleme	ntary data sources			
Socio- economic Caste census	Full geographical coverage; Disaggregation across caste and education	Land ownership data is not disaggregated by sex	Gender disaggregated information on land ownership can be reported	Done once in India in 2011; data extraction is little cumbersome
Population Census	Full geographical and population coverage Reliable: Conducted by government agencies Disaggregation across caste	Gives information on cultivator, hence not a complete measure of WLR Conducted every 10 years	Questions based on gender disaggregated ownership rights can be incorporated	One of the oldest surveys, might take time to make any changes in the questionnaire
Micro- studies	Provide actual and specific information for a statistically representative small population	Coverage is sporadic geographically and uncertain temporally	Data useful to validate macro data viz. Agricultural Census	Availability and continuity uncertain

Therefore, from utility perspective, implications of these datasets on generation of research information, policy and practice may also be different. While robust household surveys suggested by SDG, are expected to influence policy and contribute to research, from practice perspective in India, such data can be contested by state and district land administrations, who may find DILRLP and Agricultural Census data more acceptable to consider reforms.

3.2. Status of women land rights indicator in India

A comparative appreciation of the women land rights indicator i.e. share of women among owners or rights-bearers of agricultural land, type of tenure is presented in Table 4. As mentioned above, different data sets record different kind of information on land rights in general and women's land rights in particular. For example, agriculture census provides information about operational holding of 'female-headed households'. Therefore, it may miss out information on land distributed to women in joint pattas given as part of land distribution. Further, it should be noted that operational holders may not be the land owners particularly in case of non-land record states where data is collected through sampling.

Similarly, in Socio- Economic Caste Census data, there is data regarding land ownership, but again not disaggregated according to gender. Though there is information on women headed households engaged in cultivation, cultivation does not provide any information on the ownership rights. However, it highlights the role of women in agriculture, and thus supposed to be a good measure to assess their contribution.

Indian Human Development Survey (IHDS) though records gender disaggregated data on incidence of land ownership (only agricultural) among women at household and individual level, but data are not available for 40% of districts and is totally based on interviews. Population census data is particularly useful for calculating the first part of the indicator prescribed by UNSTAT i.e Agricultural Population

Data sets	Potential Women and Rights Indicators
Agricultural Census	Share of women operational holders among total operational holders of agricultural land
	(Number of women headed HHs listed as operational holders) * 100 Total number of HHs listed as operational holders
IHDS & Population	Share of adult women population owning agricultural land among total
Census	adult land owners of agricultural land
	(<u>Number of adult women agricultural land owners</u>) * 100
Socio Economic Caste	Share of women headed households engaged in cultivation among total
Census	households engaged in cultivation
	(<u>Number of women hedaed HHs engaged in cultivation</u>) * 100 Total number of HHs engaged in cultivation

Table 4: Comparative appreciation of women land rights indicator

Table 5 portrays a comparative status of women land rights indicators described above (Table 4). As per Agricultural Census 2010-11, India has witnessed a marginal increase in share of female operational holders from 11.70 percent in 2005-06 to 12.79 in 2010- 11. The 12.79 percent of operational holders arguably represent the female headed households considering the fact that Agricultural Census record the land holdings of head of households. The operational holders in most cases are not the land owners, which is partially evident from the analysis of IHDS and Population census which shows that only 4 percent of rural adult women have land records in their name (Fig 5). These differences necessitate linking of the findings with that of DILRMP data for measuring the actual percentage of land records are in the name of women. Further, there is a need of in-depth analysis of reasons of such variations between the potential data sets to logically conclude what the numbers indicate when we talk about the actual status of women land rights in India.

State Status of women land rights indicators					
	Agriculture Census	IHDS and Population	SECC		
		Census			
Andhra Pradesh	25.39	7.97	13.22		
Bihar	14.06	2.01	8.02		
Chhattisgarh	12.61	3.11	10.08		
Gujarat	14.13	4.98	8.10		
Haryana	12.06	1.86	11.36		
Himachal Pradesh	7.05	4.84	19.42		
J&K	7.34	2.65	9.58		
Jharkhand	10.98	4.68	10.00		
Karnataka	18.98	3.55	15.32		
Kerala	19.61	14.14	18.76		
Madhya Pradesh	9.63	4.38	6.75		
Maharashtra	14.98	5.96	8.87		
Odisha	3.29	1.79	8.79		
Punjab	0.92	5.03	14.54		
Rajasthan	7.92	2.14	6.85		
Tamil Nadu	19.11	6.17	12.74		
Uttar Pradesh	6.95	3.60	9.77		
Uttarakhand	9.82	10.64	25.06		
West Bengal	3.50	2.42	7.87		
All India	12.79	4.01	10.18		

Table 5: Comparative status of women land rights indicators

3.3. Benchmarking women land rights in India

Our analysis of Agricultural census data found that women in India operate less number of land holdings, lesser area and smaller size of holdings in comparison to men. They operate 12.8 percent of total operational holdings that constitutes 10.34 percent of the total area of holdings (Map 1). The average size of women's land holding is 0.93 ha, in comparison to 1.18 ha for male and 1.15 ha for all. The regional disparity with regards to women's land rights was evident with the states in the southern region showing comparatively more number and area of land holdings operated by women while the situation in Northern and Eastern region states are demonstrating a poorer picture.



Map 1: Percentage of number of women holdings in different states

In the last decade (2001-11), number (36.12 percentage) and area (23.45 percentage) of women's holdings have increased, at a pace, higher than their population growth. States like Sikkim, Rajasthan, Bihar, Madhya Pradesh and Daman & Diu have shown higher increased in women's land holdings, while states/UTs like Chandigarh, Delhi, Jammu & Kashmir, Puducherry and Kerala report a negative trend in the percentage change of women's land holdings. When compared with micro studies (12 studies in 9 states), carried out at district and block levels by researchers and civil society, we found an absolute difference of only 1 percent which could be because of differences in sampling method and sample size (Fig 1).



Figure 1: A comparison of percentage of women's land holdings (Agricultural Census, 2010-11 and Census, 2010) and percentage of women's land ownership (Micro Studies)

However, this does not portray a clear picture on the percentage of woman out of total adult woman population either owning or operating land rights. This was obtained by dividing the number of female cultivators to total female adult population (from Population census) and comparing the result with that of IHDS data, which report incidence of land ownership among women.

It was found that there is an absolute difference of 4 percent (Fig 2) equivalent to a difference of 5% in percentage terms. This could be because of differences in sample size and data collection approach. This is in line with the observations made by Agrawal (1994), who apprehended it to be maximum 2 percent. Whether, this 2 percent increase in women's land ownership status within a period of 18 years, can be attributed to the policy dividend of implementation of Hindu Succession (Amendment) Act, 2005 and state led land reforms during the last decade, need further analysis.



Fig 2: Comparison of percentage of Women Land Holdings (Agricultural Census, 2010-11 and Census, 2010) with Incidence of land ownership among women (IHDS, 2011-12)

3.4. Reasons behind inter-state disparity in women's land rights

Analysis of the spatial and temporal variations in the women holdings indicate, comparatively better situation in states (viz. Andhra, Karnataka, Tamil Nadu, Maharashtra) that had more ryotwari areas, amended Hindu Succession Act 1956, earlier to that by the Centre, have reduced stamp duty (Himachal Pradesh, Punjab, Uttar Pradesh, Madhya Pradesh, Haryana and Delhi) for registration of property in the name of women and where there has been more male out-migration.

The British land revenue systems, in particular, seem to have had a profound impact on women's land rights. During the pre-independence era, agricultural land was administered under three broad types of land tenure systems: zamindari¹⁴ (covered 57% of cultivated land), ryotwari (covered 38 percent of the cultivated land) and mahalwari (covered 5% of cultivated land). Among the three tenure systems, it was found that in the ryotwari areas (mainly the southern states) women operate more number of agricultural land holdings due presumably to land ownership by peasants and a better land record management system. Besides, land records were reportedly more complete and accurate in the ryotwari areas (Mishra, 2007; Mearns and Sinha, 1998).Earlier, Singh (1985) had found that the consequences of the green and white revolutions were more equitable and pro-poor in the ryotwari areas as compared with zamindari areas.

Similarly, the states which have amended the Hindu Succession Act, 1956 (mainly the southern states, Andhra Pradesh in 1986, Tamil Nadu in 1989, Karnataka in 1994 and Maharashtra in1994) to include daughters as coparceners prior to the amendment of 2005, show comparatively higher percentages of women's operational holdings than other states. Besides, Kerala in 1975 also abolished joint family property altogether. In most southern states women are allowed to inherit agricultural land, whether owned or under tenancy. Similarly, in these states the Muslim Personal Law (Shariat) Application Act, 1937 has been extended to agricultural lands. In contrast, the inheritance rights of both Hindu and Muslim women in north-western India are very poor and often seriously discriminate against women in their rights to agricultural land and joint property. Central India shows an average picture with regard to women's land rights (Agarwal, 2003). At the national level there seems to be a positive shift after the HSA (Amendment), 2005 with the five-yearly change in terms of percentage of holdings by males decreasing from 6.73 (2000-2005) to 5.78 (2005-2010) and that of females increasing from 16.36 to 16.99 during the same time.

The prevalence of gender discriminatory customs often obstructs women's legal rights to land. In Punjab and Haryana, the custom of *karewa*¹⁵ has restricted widows' rights to land resources and, instead, favors patrilineal control of land. This has also affected the Land Special Assistance Program for war widows in Punjab, Bihar, Uttar Pradesh and Rajasthan. Re-marriage again transfers the rights to the husband, weakening women's land rights, purportedly for strengthening of *karewa*. In contrast, in the southern states like Kerala, the tradition of *Marumakkattayam* (matrilineal inheritance among certain communities) allows women to own land (Lahoti et al., 2016).

State tenure laws also influence women's land rights to a great extent. For example, the northwestern states, namely Haryana, Himachal Pradesh, Jammu and Kashmir specify an order of devolution with strong preference for agnatic¹⁶ succession, along with priority for agnatic males.

¹⁴ This system enabled feudal lords (zamindars, jagirdars and talukdars) and other tax collectors to become proprietors of the land, enjoy permanent rights and contract with the cultivators for payment of land revenue tax ¹⁵By which the widow is accepted as a wife by one of the younger brothers of the deceased husband or by the husband's elder brother, or his agnatic first cousin. The primary reason for continuing with this custom is to retain land and property within the family. The purpose is to transfer the control of land from the widow who acquired life estate in the absence of male descendants, to her husband's brother or to a patrilineal family member.

¹⁶ Agnatic seniority is a patrilineal principle of inheritance where, in terms of order of succession, the head of the family's younger brother gets precedence over his own sons. Children (the next generation) succeed only after the males of the elder generation have all been exhausted.

These states allow widows to inherit land only in the absence of male heirs. In contrast, the southern, eastern and western states are silent on such devolution (Agarwal, 2003). Uttar Pradesh and Rajasthan, have allocated some surplus land on priority to war widows.¹⁷ Odisha allots at least 40 percent of government wasteland kept for agriculture and house site purposes, ceiling surplus land and Bhoodan land to landless people, with high priority being given to landless widows and unmarried women up to 30 years of age. At least 40 percent of this land is reserved for SC and ST women (UNDP, 2008).The Bihar Land Reforms (Fixation of Ceiling Area and Acquisition of Surplus Land) (Amendment) Act, 2009 has provided 50 percent of the land acquired by the state government to SC and ST women. Some southern states like Andhra Pradesh and Karnataka have purchased homestead or agricultural land for women and allocated it to them.

Southern states particularly Andhra Pradesh and Karnataka have introduced a 'gender' field for landowners in their property records, a practice now being pursued by the Department of Land Resources (DoLR) for pan India implementation under the Digital India Land Records Modernisation Programme. Off late, states like Odisha and West Bengal have agreed to introduce a gender attribute in land records.

Land institutions often discriminate against women in access and ownership of land resources. This has been reported in some northern and eastern states. Agarwal (2003) found that this bias is especially prevalent in recording the daughter's inheritance shares by the patwari (village land records official) in north India. Mearns and Sinha (1998) also found that conventional land survey and settlement operations in Odisha discriminate systematically against the rural poor and other socially excluded groups. Gupta (1993) has reported that Operation Barga in West Bengal was biased towards the registration of male rather than female tenant farmers in spite of its success in other respects.

Reduced stamp duty is likely to have encouraged women's property ownership rights jointly or solely in the name of the woman (Department of Planning, Government of Rajasthan, 2006). A study by Landesa (2013) in three states reported that women have benefited significantly (one out of four women interviewed had benefited) from this incentive in Madhya Pradesh, where the state provides a 2 percent incentive for properties registered in the name of women. Additionally, this has encouraged them to obtain Kisan Credit Cards in their names for availing of working capital. The data concerning four states, namely Madhya Pradesh, Haryana, Uttar Pradesh and Punjab, which have lowered stamp duty, shows that the average number of women's operational holdings increased by 42 percent during 2001-11, in comparison with the average national increase of 37 percent. This indicates that, stamp duty reduction might have an influence on enhancing the status of women's land holdings.

Surprisingly, male out-migration was found to have a profound impact on women's land ownership especially in the hilly and tribal areas. Analysis of the 64th round NSSO data on male out-migration showed a positive correlation (0.22) between women's land holdings and male out-migration, though it yields some adverse impacts on women's socio-economic condition

It was also found that the presence of dedicated Civil Society Organisations (CSOs) and Community Based Organisations (CBOs) making a difference in women's land rights status particularly in Andhra Pradesh, Bihar, Odisha and West Bengal.

¹⁷<u>http://shodhganga.inflibnet.ac.in/bitstream/10603/31670/10/10</u> chapter%203.pdf

4. Conclusion

Monitoring of SDG implementation is critical for India and requires good datasets. Given the fact that women's land rights have manifold implications on progressive realization of other SDGs, there is a need to monitor progress through an effective monitoring mechanism by fostering multistakeholder participation. India has made significant progress in data production, dissemination and use for development advocacy and informed policy making. The 'Digital India' initiative has further brought in a revolution in production of administrative data on various parameters including land. However, the demands for production of internationally comparable data is emerging specifically after the implementation of the SDGs. The present analysis indicate the availability of potential datasets to begin with though, there are needs to improve clarity, comparability and coherence in the existing data sources. A majority of the data sources lack desired disaggregation (viz. gender, age, ethnicity etc.) and granularity. Data sources like Agricultural census must consider reporting agricultural land ownership data along with operational holding data periodically to track the relevant SDG indicator. This will be very easy to execute in view of the fact that ownership data is also being collected, during Phase I of the Census from village land records. . Implementation of a common land tenure module will help in ensuring quality and standard data production. Application of information technologies and multi-stakeholder-collaboration in data production and dataconvergence (from different sources) will significantly help in improving data-quality, reliability and access and in meeting the global standards. Open-access availability of such data with scope of integrating indicator-building user-interface would expedite periodic and public monitoring and help stakeholders and policy makers in making more informed decisions. Thinking about an institutional platform connecting land data-agencies (viz. Division of Agricultural; Census) with policy makers (viz. DoLR or Niti Aayog), may be a starting point towards institutionalization of proactive data integration into land-policy space. Government of India shall consider inclusion of "Land" to the list of "High Value Datasets" of data.gov.in (Open Government data Platform in India). It also needs to develop standards for the land domain under the e-Governance Standards (http://egovstandards.gov.in/) to ensure sharing of land information and seamless interoperability of data on global and local platforms, enhancing e-governance applications and for monitoring national and global targets including SDGs.

Acknowledgement

Authors acknowledge with thanks the support of the World Bank, India for carrying out the study.

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