Mapping Antecedents and Outcomes of Marginality and social exclusion among small landholder: A Systematic Review

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Appendix A

Table A1. Highlighted areas with respect to social exclusion and Inclusion of small farmers in previous studies

Areas	Authors[1]	Aspects of Social Exclusion/inclusion	From the perspective of smallholders	Resolutions	Expected outcomes
Climate change	Taylor (2013)	Climate vulnerability, inequality and power, equity, and human security.	Vulnerable agrarian household having less control over water, land, labor, and credit, insecurity	Policies for climate change adaption in social justice and agriculture environment	More control over water, land, labor, and credit, health security, sustainable livelihoods, agriculture, and economic development
	Leichenko and Silva (2014)	Poverty is a multidimensional condition and dynamic that is formed through the relationship of the economic, social, political, and environmental process, historical circumstances, individual, and social characteristics.	Various direct and indirect channels of climate change and variability might worsen small farmers poverty	Policies for climate change adaption by small farmers is needed	It improves economic, social, political and environmental conditions, poverty alleviation, sustainable agriculture, and economic development.
	Rouf et al. (2015)	Environmental degradation and crop marketing, traditional culture, social organizations, and cultivation technologies are changing towards	Injustice and inequality among poor peasants by wealthy peasants.	Policies for poor farmers about environmental degradation, social justice, and inequality	Inclusion of poor farmers, social justice, equality, market access, Poverty reduction, Sustainable and economic

	mechanized capital agriculture			development
Bijani and Hayati (2015)	Water conflict, climate change	Small farmers are the main losers who are suffering from climate change, drought, water scarcity, and water management	Policies for poor farmers for water conflict	Adaptation to climate change, improves water management, more productivity, poverty reduction, sustainable and economic development
Cohn et al. (2017)	Climate change issue	Smallholders suffer due to climate changes to production might create various problems, including hunger, poverty, migration, civil conflict, and high rate of unemployment	Needs for smallholder farming systems between climate change and sustainable economic development	Increase production capacity, minimize hunger, poverty, migration, civil conflict, and high rate employments, sustainable agriculture and economic development, sustainable livelihoods
Moseley (2016)	Climate change issue	Smallholder farming marginalization in Botswana much to do with regional, domestic, and global political economy as it contracts with climate change	The government should support smallholders in climate change adaptation based on a grounded understanding of true factors of marginalization and insecurity of food and develop pro-poor climate adaptation system	Increase production capacity, minimize hunger, food security, poverty reduction, migration, sustainable agriculture and economic development, sustainable livelihoods
Sattar et al. (2017)	Climate change issue	Social networks, education, and financial capital are the major factors in adopting strategies	The government should support smallholders in climate change adaptation based on a grounded understanding of true factors of marginalization and	Increase production capacity, minimize hunger, food security, poverty reduction, migration, sustainable agriculture and

				insecurity of food and develop pro-poor climate adaptation system	economic development, sustainable livelihoods
	Tahiru and Legon (2019)	Climate change issue	Three different indices to assess the vulnerability of small farmers to climate change: livelihood effect index, livelihood vulnerability index and inter-governmental penal index	Government and non-government actors' interventions could positively impact on smallholders' farmer's livelihood and neutralized the adverse impact of climate change adaptation processes, to combined traditional and modern practices, also considered smallholder farmers socio-demographic characteristics	Increase production capacity, minimize hunger, food security, poverty reduction, migration, sustainable agriculture and economic development, sustainable livelihoods
Role of Technology in Sustainable Agriculture and Social Exclusion	Lee (2005)	Agriculture technology also didn't fulfill the specific socioeconomic farmer's conditions and local environment conditions	The benefits of output with the use of technology was unequally distributed	Reform in policies for agriculture technology	Agriculture sustainability, increase in output and export, more job opportunities, economic development, gender equality
	Hall et al. (2008)	Inequality, without realizing the broader ethical and social implications of transgenic technology	Farmers are formally less educated in consequence of compatibility and complexity of transgenic technology	Police for small farmers education programs regarding technology benefits and usage	Agriculture sustainability, increase in output and export, more job opportunities, economic development, gender equality
	Pircher et al. (2013)	Gender inequality, socio-economic and land ownership differentiation	Farmers were not interested in legume technology in maize-cropping	Police for small farmers education programs regarding technology benefits and usage	Agriculture sustainability, increase in output and export, more job opportunities, economic development, gender equality,

				Increase in small farmers wealth
Hayden et al. (2018)	Hurdles to understand integrated crop-livestock systems (ICLS)	Lack of insurance & financing, regional infrastructure	Policy support for social infrastructure and economic incentives to successfully enable farm changes to ICLS	Agriculture sustainability, increase in output and export, more job opportunities, economic development, gender equality, increase in small farmers wealth
Emerton and Snyder (2018)	Gaps exist between the sustainable land management decisions farmers' preferences to make and those which farmers actually capable of undertaking, given their available resources and economic circumstances	The incompetence of farmers' decision-making about practices of sustainable land management (SLM)	The policy needs to understand the importance of SLM interventions instead of simply benefits/cost-based measures	Agriculture sustainability, increase in output and export, more job opportunities, economic development
Fandika et al. (2019)	Water conflict, climate change	Social learning for smallholder farmers in soil water management with the help of user-friendly technology, monitoring tool (chameleon) was created for smallholder farmer's mental fitness for soil water management.	Policies required to encourage farmers in the adoption of user-friendly technology	Saving time, labor, water, and help farmers to change their conventional irrigation systems, reduced the water conflict among different farmers, and increased their flexibility to climate change.
Molina-Maturano et al. (2019)	Constraint-based innovation (CBI) theory in agriculture and sustainable development (SD)	CBI helps in achieving the bottom of the pyramid needs of smallholders	Needs to educate smallholders about innovative ideas in agriculture context and direction of innovation, innovation networks	Sustainable rural livelihoods, technology adoption by smallholders such as agriculture machinery, substitute farming

					systems, mobile phone applications, water for irrigation equipment and biomass systems
Rural Development, Social Exclusion	Midgley et al. (2005)	Lack of appropriate data about rural farmers	Rural people facing marginalization because of policy negligence	The bottom-up approach should be taken to gather rural data	Rural development, more job opportunities, sustainable economic development, reduce poverty
	Shortall (2008)	Misinterpretation of social processes	Confused and interchangeable concepts of social capital, social inclusion, and civic engagement	Analysis of civic engagement, social inclusion means, and why participation is assumed to be the standard of different conclusions about who is included and excluded.	Rural development, equality, inclusion, reduce poverty
	Fleming (2009)	Creative economic rural development projects not considering rural people	Creative economic rural development projects more related to economic strategies instead of environment and social justice, not considering class and race	Reexamine economic rural development projects and reconsider class and race of rural people	Rural development, social inclusion, high productivity, and economic development
	Shucksmith (2012)	Inequality, hypermobility, and place	Discursive social position	There is a need to understand not only the mechanism of construction of social position but also how these symbolic and discursive constructions are conscripted within class formation and dominance	Rural development, improve social position and equalities, reduce poverty
	Bock (2016)	The financial crisis, social inequalities	Most of the rural people facing marginalization	Social innovation the new idea of exogenous with political recoupling for rural development	Rural development, improve social position and equalities, reduce

				and inclusion process should be considered	poverty
	Guirado et al. (2017)	Lack of social farming programs	Less empowering and job opportunities	SF support people who are at risk of social exclusion through engaging them in agriculture activities with the aim of empowering them, giving them job opportunities and including them within the societies	Rural development, empowerment, more job opportunities, and improve health
	Tian et al. (2019)	Elite capture in anti-poverty programs	Social exclusion was happened due to bad administration of anti-poverty programs and saturnine democratic system	Concerning social structural changes, marginalized and socially excluded people must be truly considered in policies and rural development programs	Rural development, reduction in poverty, improve productivity, food security, promote equality
Rural farmers' migrants with respect to social exclusion	Rye (2006)	Non-migrants	Lack of cultural capital and economic resources	Encourage migration	More access to economic resources and improve cultural capital
	Rye and Andrzejewska (2010)	Migrant's worker on cheap wages, which creates the problem of "social dumping"	Work in bad conditions and poor wage rates	The government should implement labor regulation that specifies minimum standards for labor conditions and wage levels	Equality, improve the income of migrants agricultural workers and working conditions
	Han et al. (2011)	House registration system	The problem of social and occupational mobility of peasant in cities	Improvements in house registration system are needed	Social inclusion, improve social and occupational mobility of farmers
	Wang (2017)	Discrimination of rural-urban citizen	Rural-to-urban migrants gained higher social status than those who still stay in villages, but their social status still remains	Policies regarding citizenship law required	Improve social inclusion, social status, equality

			significantly poorer than those gained by the urban citizens		
	Sihaloho et al. (2016)	Non-migrants	Lack of economic resources	Encourage migration	Sustainable livelihood strategy
Poverty and social exclusion of small farmers	Hazell et al. (2006)	New technology might badly affect small farmers as they are not educated and technical	Supermarkets are growing in developing countries and set strict standards and requirements for supply and product quality, which is much difficult for uneducated smallholder to comply with those standards	The government should ensure that the macro-economic is stable and rural roads; public goods health care, rural education, and funds by the state are available. Moreover, the state also ensure that proper implementation of the rule of law in rural areas helping smallholders for resolving any land dispute and facilitate them with credit markets	Rural development, food security, more job opportunities
	Pritchard et al. (2017)	Land-livelihoods nexus	Incompetency of rural household decision making regarding the complex decision about nonfarm and land-based activities	There is a need for rethinking regarding the importance of land in the development of rural household and their livelihood strategies that are the ways by which households 'hang in', 'step up' or 'out' or certainly, perform other activities	Sustainable livelihood strategy, poverty reduction
	Pandey (2018)	Inequality	Little access to land and livestock, low level of education, big family size, and higher dependency ration	Policies regarding access to land, livestock, and education demanded	
	Hameed and Qaiser (2019)	Lack of agriculture welfare policies	Deprived in agriculture resources, education, health, income, wealth,	Policies should be formulated which improves the income of deprived households at local and regional levels	Rural, agriculture and economic development, improvement in income, education,

			political and social participation, and financial hardship		and health
Government Intervention and Social Mobility	Djurfeldt et al. (2008)	Policy negligence	Youth in the agriculture sector is discouraged from participating in their parental occupation	Revision of agriculture policies	Youth will actively participate in agriculture activities and ensure food security
	Dribe and Svensson (2008)	Weak government intervention in the agriculture sector	Limited access to farmland, innovations, and initiatives and access to market and extension services	Revision of agriculture policies	Increase food production, improve the social status of farmers
	Huq (2009)	High inequality in a recent generation as compare to their old generation	Issues of social mobility and inequality, fewer chances for the upward mobility	Land reform	High productivity, greater the control and improve social status
	Ngoc Anh et al. (2012)	Income generated through agriculture activities is less than half from those groups making income through non-agriculture activities	Central and local government policy related to labor market access in not considering farmers appropriately	Reform in market access policies	Food security, equality, higher job opportunities
	Black et al. (2019)	2008 economic crises, inequalities	No secure employment and loss of services worsen the shift of social risk	Policies reform in the welfare system	Equal job opportunities, economic growth, agriculture sustainability
Socioeconomic status & social capital	Pilgeram (2011)	Less-educated farmers	Illiterate farmers have no privilege and opportunity of off-farm income and get less access to market	Promote education	Sustainable agriculture and social sustainability. More market access, more off-farm opportunities
	Zhang et al. (2013)	Low social mobility due to lack of educated and vocational training	Difficulty in social mobility due to education	Promote education	High social mobility, improve social capital, increased income, food security

	Paramitha et al. (2018)	Low education, family background	Lowest social position	Promote education	Upward social mobility, highest social status
	Wang and Lu (2016)	Income gap	Less social participation, social trust, and social networks	Improve social capital	Increase the income of small farmers, gets new knowledge and skills
	Rasmussen et al. (2017)	Less competence of farmers	Weak leadership skills and social capital of farmers association	Design leadership program for small farmers	Improve the social capital of small farmers with income, improve leadership skills, and directed to procedural and behavioral change in farmers' associations. Sustainable agriculture
Women inequalities in agriculture	Eneyew and Mengistu (2013)	Gender inequality and double marginalized livelihoods concept in agricultural pastoral societies	Women have less control and access over land, income, livestock, which are core to secure a sustainable livelihood. local customs violence against women and lack of awareness about gender-related government interventions, women faced double marginalization	Clear gender-related government policies should be articulate to assuring legal rights for men and women	Promote equalities, women empowerment, more control over resources, increase productivity, improve food production and improves women income, economic development
	Jahan (2018)	Patriarchal system	Women's work is different from men's and having less appreciation within the societies and family. have little access to	Reconsider the idea of Women in Development (WID) model, that the participation of working women's must improve their social status.	Promote equalities, women empowerment, more control over resources, increase productivity, improve food

			agricultural resources, land, jewelry, money		production and improves women income, economic development, improve social status
Women Empowerment in Agriculture	Malapit et al. (2015)	Inequalities	Women farmers role is invisible	Policies are needed for gender equality	Women group membership assists in reducing workload, more control over income, and reduce inequality, production diversity, maternal nutrition, and improves children's diets.
	Centrone et al. (2017)	Inequalities	Less participation of women in water management program in agriculture	Policies are needed for women farmers participation in farmer organizations	Gender empowerment, sustainable agriculture development
	Benson et al. (2017)	Inequalities	Discourage women global agriculture development agents through their participation in societies, participation in crop and livestock production, contribution to farm operations	Policies are needed for gender equality	Women group membership assists in reducing workload, more control over income, and reduce inequality, production diversity, maternal nutrition, and improves children's diets
Treating sustainable development goals through treating marginalized small	McMichael and Schneider (2011)	IAASTD report	Small farmers follow internal markets produced in the report of International Assessment of Agricultural Knowledge, Science	Strong need for policies and strategies that stabilize local ecological knowledge and small farming culture for the achievement of the MDGs	Achievement of the MDGs, food security, eradication of hunger and extreme poverty

			and Technology for Development (IAASTD) instead of to develop specific agro-ecological systems based on bio-regionally		
	Abraham and Pingali (2017)	Access to market and technology	Social problems faced by women and smallholder in agriculture activities	Policies to fix transaction costs (e.g., for favoring maize, wheat, and rice) including accessing credit, R&D, quality inputs and support commercialization, diversification, and intensification	Attain the SDG related to hunger and nutrition (goals 1&3), poverty reduction (goals 1 & 8), social freedom and inequality (goals 5 & 10) and environment (goals 12, 13 & 15) which are directly connected with the agriculture sector
	Padda and Hameed (2018)	Agrarian and non-agrarian assets, energy, education, housing, access to clean drinking water, and sanitation	Sanitation facilities, deficiency of pure drinking water, inappropriate energy sources, bad housing conditions, and poor economic resources	Additional funds from federal and local governments should be provided for education, social welfare, agriculture development, and water supply in rural areas	Improvement in social status, enhance education level, improve the social welfare of farmers, agriculture development, sufficient supply of water, secure housing and economic development
	Vamuloh et al. (2019)	Farm structure, farmers' demographic, farmers' attitude and farmers' characteristics	Lack of participation in contract farming program	Design policies which encourage farmers to participate in contract farming programs	Attainment of the SDGs
Farmers Social Networks in sustainable agriculture development	Liverpool and Winter-Nelson (2010)	Low productivity, climate vulnerability	Less participation in social networks, less adoption of new technology	Participation in social networks	Learn new technology importance, get rid of poverty, economic growth
	Hightower et al.	Underemployment and	Less participation in	Participation in social	Improve trust,

	(2013)	high poverty	social networks	networks	income, food, and health
	Muange et al. (2014)	Lack of information about crop varieties, weak wealth and educational status	Not interested in the adoption of improved crop varieties due to lack of information	Use more agriculture information networks	Food security, improved income, sustainable agriculture development
	Cadger et al. (2016)	Lack of knowledge about crop and land management	No participated in the agriculture development project	Participation in social networks	Crop-specific management practice, land management, and sustainable agriculture development
	Gebrekidan Abbay et al. (2019)	Low income	Less participation in social networks	Participation in social networks	Improve social status and sustainable livelihoods
Farmer based organization	Efendiev and Sorokin (2013)	Low cooperative development	Not interested in participating in rural social organizations	Encourage farmers to participate in social organizations	Economic development
	Mohammed et al. (2013)	Weak social capital	Less access to the credit facility	Encourage farmers to participate in farmer-based organizations	More access to the credit facility, improve social capital
	Sheikhi and Maghsoudi (2014)	Distance to the town, field components of agrarian land	Low social status, farmers education level, agriculture experience, arable land for cultivation, community involvement and amount of loan	Encourage farmer's attitudes for joining the trading system of agrarian activities	Improves farmers social status, education level, market access, agriculture experience, arable land for cultivation, community involvement and access to a loan
Farmer field schools (FFSs)	Mancini et al. (2008)	Farmer education on the social and environmental sustainability of cotton farming	FFS was adapted to educate integrated pest management' (IPM) for minimizing the use of highly toxic pesticides that has a	Farmer Field schools FFS programs should be adopted to educate the farmers	Improve ecological knowledge of farmer, increased yield levels, sustainable agriculture, economic

		bad impact on the environment and human health		development
Phillips et al. (2014)	Farmer Field Schools (FFSs) as a tool for poverty alleviation	FFS provides agricultural education to adult farmers that help them in improving livelihoods and productivity.	Farmer Field schools FFS programs should be adopted to educate farmers	Well-educated and socially strong, more effective in increasing yields, adoption of innovative farm practices, sustainable agriculture, economic development
Charatsari et al. (2016)	Farmer Field Schools (FFSs) as a tool for poverty alleviation	FFS provides agricultural education to farmers and improves their social capital	Farmer Field schools FFS programs should be adopted to educate farmers	FFS improves farmers' skill, knowledge, and competency and also build social capital within local communities
Charatsari et al. (2018)	FFS increased acceptability in their communities of those farmers who were socially excluded	FFS improves farmers' psychological and social needs	Farmer Field schools FFS programs should be adopted to educate farmers	FFS improves farmers' skill, knowledge, and competency and also increased acceptability within communities and improves farmers' psychological and social needs
Karimi and Niknami (2020)	Farmer Field Schools (FFSs) as a tool for poverty alleviation	FFS increase knowledge, economic, production and social status	Farmer Field schools FFS programs should be adopted to educate farmers	More job creation, crop marketability, execution of organic fertilizers, use of micro and macro fertilizers, use of pesticides, sustainable agriculture and economic development

Source: authors' development.