Discoveries in Agriculture and Food Sciences - Vol. 11, No. 5
Publication Date: October 25, 2023
DOI:10.14738/dafs.115.15679.
Taku, N. J., Ndah, N. R., & Mbangari, K. F. (2023). Gender Participation in Agricultural Production: An Assessment to Production Resources. Discoveries in Agriculture and Food Sciences, 11(5). 74-84.

Gender Participation in Agricultural Production: An Assessment to Production Resources

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ABSTRACT

Food security can be enhanced through increase in crop production, processing solution, marketing solution and sustainable packaging. Men and women play vital roles in agriculture as food producers and processors. Gender differences in crops cultivated and participation in agricultural activities are shaped by cultural norms and values. This study aims to characterize the different actors in agricultural production, assess the participation of men and women in food and cash crop production as well as identify gender gaps in accessing productive resources in Meme Division of the Southwest Region, Cameroon. The Krejcie and Morgan table was used to determine the sample size of 150 farmers and farmers were randomly selected to constitute the sample. A 4-points likert rating scale was used to assess gender participation in food and cash crop production activities. Results revealed that food crop production activities like weeding and harvesting (3.94), hoeing and sowing (3.91), land clearing (3.88), marketing (3.78), fertilizer application (3.49), transportation (3.19) and pesticide application (2.95) were highly ranked as women activities. The participation of men in cash crop production activities had high mean scores for activities like land clearing, pruning and drying (3.91), spraying (3.88), harvesting (3.76), marketing (3.75), transportation (3.71) and weeding (2.78). Men easily access production resources compared to women. This study recommends that agricultural gender gaps could be bridged through enhancement of womens' participation in production activities and ablation of cultural norms and values that limitwomen in production. This will address issues of hunger, food insecurity and poverty.

Keywords: gender participation, Agriculture, cash crop, food crop, production resources

INTRODUCTION

Food security can be enhanced through increase in crop production and men and women play vital roles in agriculture as food producers and processors [1]. Many agricultural development projects are gender biased by the assumption that men are the primary agricultural actors. The activities of women represent a crucial resource in agriculture and in the rural economy, and the contributions of women to agriculture have in many cases been described as substantial but not noticed [2].

Gender differences in crops cultivated and participation in agricultural activities are sharpened by cultural norms and values. Gender has been neglected in discussions of agricultural sustainability and gender inequality remains a significant barrier to the development of inclusive, genuinely sustainable forms of agriculture [2]. Supporting farming women through access to land and inputs has positive results in terms of food security and economic growth [1]. When men or women have access to production factors like physical capital, land, access to credit, yield-enhancing inputs and labor systems, it increases the intensity of engagement of both male- and female-headed households [3].

Despite their roles, women are not given equal opportunity as men in all areas, even if they participate to a large extent in Agricultural production [4]. Gender differences due to socially perceived segregations among men and women hamper acquisition and control of agricultural resources [5]. The relative bargaining powers of women and men within a household largely depend on their relative access to, control over, and utilization of resources [6].

Women's capabilities to engage in sustainable environmental practices remain affected by their unequal access to resources like land, labour, capital [7]. Their participation in intra-household decision-making even in activities that are considered within their domain is lower compared to men [8]. Women lack access to other resources, such as agricultural information, have less access to extension services, and participate less in agricultural interventions compared to men [9]. Extension services are typically biased, with information targeted mainly to male members of the farm household and delivered by male extension agents in ways that do not always recognize the role of women in agriculture [10]. Access to knowledge and information, which is often shaped by norms and beliefs about women's rolesand capabilities, affects women's ability to access and use technologies [11]. Gender differences in access to technology have impeded opportunities for women farmers compared with male farmers [12]. Access to assets and involvement in agricultural and pastoral livelihoods are reflected too in the gender differences in poverty levels [13]. These differences are also observed in access to indigenous knowledge used for adaptation to climate change, with men having typically adopted such practices faster than women [14].

Placing gender inequality among farmers in terms of crop production will not only create a lacuna in the field of agriculture but also will subject the people to hunger and starvation [15]. This study aims to characterizes the different actors in agricultural production, assess the participation of men and women in food and cash crop production and also identify gender gaps in access to production resources in Meme Division of the Southwest Region, Cameroon.

MATERIALS AND METHODS

The study was carried out in Meme Division located on latitude 4° 50' 60" North of the Equator and longitude 9° 20' 60" East of the Greenwich Meridian.The study population was made of men and women depending on agriculture for livelihood in the study area. Using the Krejcie and Morgan table, a sample size of 150 farmers was determined and farmers randomly selected to constitute the sample. A structured questionnaire made up of 3 sections was developed. The first section collected data on socioeconomic characteristics of the farmers. The second section captured information on men and women participation in food and cash crop production activities. A 4-points likert rating scale graded Very High = 4, High=3, Low =2, Very low =1 was used to assess gender participation in food and cash crop production activities. The mean score of respondents based on the 4 - point Likert rating scale was computed as 4+3+2+1= 10/4= 2.50. Using the interval scale of 0.05, the upper limit cut-off point was determined as 2.50 + 0.05= 2.55; and the lower limit as 2.50 - 0.05= 2.45. Based on this calculations and values, mean scores< 2.45 were ranked "Low" and presented (*) while those between 2.45 and 2.54 were considered "Medium" and presented as (**). Mean scores ≥ 2.55 were considered "High" and presented as (***). Cash crops investigated in the study were oil palms and cocoa while 'the main staples of the area (plantain, cocoyam, cassava, yams and vegetables) were the considered food crops. Identified production activities for both food and cash crops in the study were; Land clearing, hoeing, digging, weeding, sowing, pruning, fertilizer and pesticide application, spraying, harvesting, drying, transportation and marketing. The third section analyzed identified gender gaps in access to production resources in the area under investigation. Collected data were analyzed using SPSS.

RESULTS AND DISCUSSIONS

Socio-economic Characteristics of the Farmers

Majority of farmers in the area were men (58%) and of middle age of 40-59 years and have been farming for 6-10 years. This is an active age and everything been equal, productivity is expected to rise with age and increase experience in farming. Similar observations were found in [16]. A low level of education is generally observed in the study area and this can retrain economic activities, human capital and technology adoption. Most households (78%) had 6-10 persons providing the much-needed labour for farm activities. [17] asserted that agricultural activities are labour intensive and large household sizes provide farming labour at little or no cost. Majority of the respondents had farm size <5ha (94%), were landowners (52%), cultivating for subsistence and commercial purposes (62%) using mostly traditional tools 92%).

Table 1: Socio-economic characteristics of the respondents

Variable	Frequency	Percentage
Sex		
Male	87	58
Female	63	42
Age		
20-39	51	34
40-59	87	58
60 and above	12	8

Farming experience		
5 years	47	31.3
6-10 years	63	42
11-15 years	21	14
>15 years	19	12.7
Level of education		
No formal education	45	30
Primary education	89	59.3
Secondary education	14	9.3
Tertiary education	2	1.3
Household size		
1-5 persons	21	14
6-10 persons	117	78
More than 11 persons	12	8
Source of farm labour		
Family	138	92
Paid labour	12	8
Land tenure system		
Landlords	78	52
Tenants	54	36
Both	18	12
Farm size		
0-5ha	141	94
6-10ha	9	6
Farming purpose		
Subsistence	18	12
Commercial	39	26
Both	93	62
Farming tools		
Modern	9	6
Traditional	138	92
Both	3	2

Gender Participation in Food and Cash Crop Production Activities

Table 2 revealed that men and women are involved in all food crop production activities even though there are discrepancies in their level of participation. Activities like weeding and harvesting (3.94), hoeing and sowing (3.91), land clearing (3.88), marketing (3.78), fertilizer application (3.49), transportation (3.19) and pesticide application (2.95) were highly ranked as women activities. The results are endorsed by [18] who noted that women are mostly involved in farming activities like planting crops, weeding the farm area, fertilizer application and crop harvesting. Digging as an activity has a low mean score for women (1.45) but ranked high for men (3.80). Digging is energy demanding and men are more personified with the strength for such activity. Similarly, [19] noted that men dominate activities with high energy requirements or technical know-how. Other food crop activities ranked high for men participation were transportation of crops (2.78), harvesting of crops (.2.76), land clearing (2.72) and pesticide

application (2.52). Women's and men's participation in agricultural production is guided by gender division of labour based on gender roles and responsibilities [20]. Harmonization of the both men and women in farming activities is a road map to agricultural sustainability and food security [21].

Table 2: Likert rating scale of gender participation in food crop production activities

Food crop production activities	Women mean score	Men mean score
1-Land clearing	3.88*** (0.35)	2.72*** (0.84)
2-Hoeing	3.91*** (0.29)	1.42* (0.59)
3-Digging	1.45* (0.65)	3.80*** (0.31)
4-Weeding	3.94*** (0.24)	1.97* (0.81)
5-Sowing	3.91*** (0.29)	1.42* (0.59)
6-Fertilizer application	3.49*** (0.64)	2.27* (0.92)
7-Pesticide application	2.95*** (0.84)	2.52** (0.96
8-Harvesting	3.94*** (0.24)	2.76*** (0.88
9- Transportation	3.19*** (0.64)	2.78*** (0.98)
10-Marketing	3.78*** (0.51)	1.97* (0.81)

NB: Figures in parentheses represent standard deviation. * Stands for low contribution, ** stands for medium contribution and *** high contribution.

With regards to cash crop production activities, the participation of men had high mean score for activities like land clearing, pruning and drying (3.91), spraying (3.88), harvesting (3.76), marketing (3.75), transportation (3.71) and weeding (2.78). These activities may be perceived as more physically demanding and therefore need to be conducted by men [20]. This is in line with the findings of [22] where men participated more in activities like pruning, harvesting, drying and marketing of the cash crops. Generally, a low level of women participation is observed for cashcrop activities except for weeding and drying that had average mean scores of 2.79 and 2.53 respectively.

Table 3: Likert rating scale of gender participation in cash crop production activities

Cash crop production activities	Women mean score	Men Mean score
1-Land clearing	1.42* (0.59)	3.91*** (0.29)
2-Weeding	2.49** (0.96)	2.78*** (0.98)
3-Pruning	2.27* (0.92)	3.91*** (0.29
4-Spraying	2.28* (0.91)	3.88*** (0.40)
5- Harvesting	1.47* (0.67)	3.76*** (0.47)
6-transportation	2.32* (1.00)	3.71*** (0.51)
7-Drying	2.53** (0.76)	3.91*** (0.29)
8- Marketing	2. 28* (0.91)	3.75*** (0.48)

NB: Figures in parentheses represent standard deviation. * Stands for low contribution, ** stands for medium contribution and *** high contribution

Gender Gaps in Access to Production Resources

Figure 1 presents findings on access to production resources

Access to Land:

There is inequality in access to land with men (93.1%) having more access to land compared to women (33.3%). The fact that women have limited access to this important factor of production increases their vulnerability, dependency and limits their motivation for agricultural engagement. A judicious use and control over productive agricultural resources is required to achieve a sterling performance [5]. Women's access is often through sharecropping and other lease arrangements since customary systems of land inheritance and land allocation from chiefs are not in their favor. It is critical for women to have secure tenure to the land that they farm so that the death of a spouse or separation does not affect their productivity. Findings corroborated by [23] who noted that women encounter various challenges in their land accessibility owing to cultural, social, economic and demographic barriers and portions of land they control are usually less fertile and further aggravated by unsecured ownership.

Access to Financial Institutions:

Results equally revealed that men (70.1%) have more access to financial institutions. Land is important collateral for loans and women's limited ownership limits their access to loans and defines the amount given them as loan. In some cases, their husbands must act as guarantors for women to access loans. Facilitating and increasing women's financial empowerment is important to enhance their productivity and livelihood. [23] uphold this finding that women have limited access to agricultural credit.

Access to Extension Services:

Limited access to extension service is observed even though men (54%) compared to women (23.8%) had access. Extension's focus over time has been on cash crop production, a sector dominated by men with little attention on food crops cultivated by women. Moreover, extension meetings are usually organized on market days and women faced difficulties to attend because they have to take their produce to the market to sell and acquire other food items and therefore do not benefit from information and trainings of the meetings. Extension programs are aired and very few women have and listen to radio and can read printed material used by extension for information dissemination. According to [24], the agricultural extension services do not always consider women to be farmers. This is further asserted by [25] that agricultural extension systems, often for reasons of convenience, mainly inform the male heads within the households.

Access to Markets:

There is no gender gap to access to markets in this study as 93.10% men and 96.70% women fully participate in commercialization of farm products. Building farmer's productive capabilities and linking them to markets are important empowerment strategies to overcome poverty and ameliorate living standard considering their dependency on farm income for livelihood.

Access to Innovations:

Men (67.80%) have more access to innovations than women (38.10%) in the study. Agricultural productivity can only be improved by enabling all farmers to use modern technologies without any discrimination [26]. Low agricultural productivity is still a challenge, which may be

attributed to the limited adoption of agricultural technologies, especially by female farmers [27]. [28] noted that technologies are not designed and distributed in ways that meet the needs of women. This gives men a relative advantage over women who often than not rely on rudimentary tools for production activities and hire skilled labour to manipulate adopted innovations thereby scaling their cost of production.

Access to Labour:

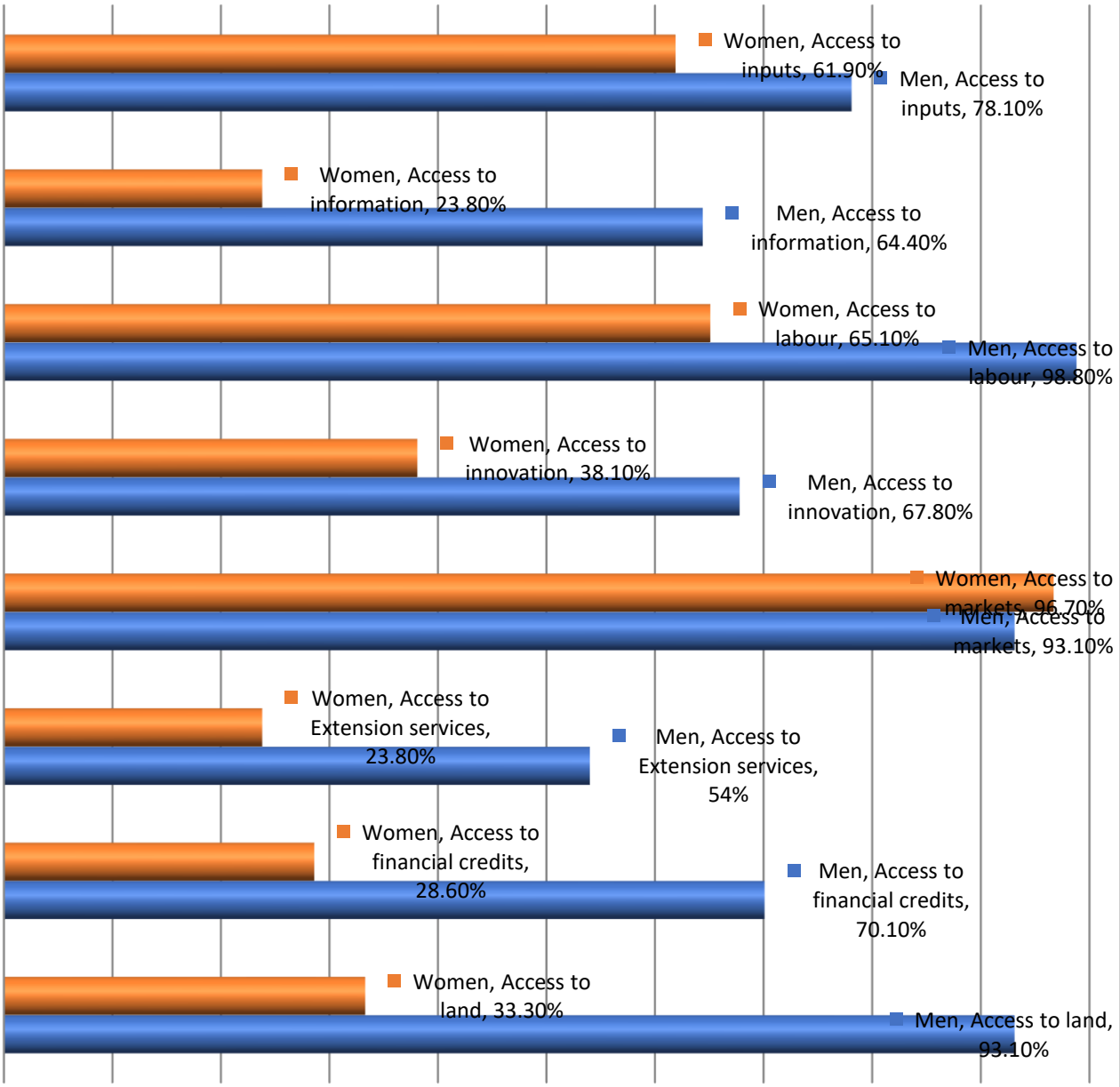
Even though both men and women have access to labour, there is an observable discrepancy with men (98.8%) having more access to this important productive resource than women (65.1%). Most agricultural labour is provided by the household and the fact that most households are male headed makes them prioritize their farms and decisionon who uses householdlabour, when, for which activities and what quanity. The prioritization of men's plots also means that labor is allocated to men's plots first in the day, which results in less labor and potentially less productive labor available for women's farms ([29]. Most labour for women's farm operations is provided either by the self-help groups (often referred as "ngangi groups") to which they are affiliated and benefit in a rotary man error through hired labour.

Access to Information:

The results portray that 64.40% men have more access to agricultural information compared to 23.80% of women. Same observation was made by [5]. Information and knowledge are essential tools in agriculture [30] and access empowers the farmer and enhances living standards. Sources of agricultural information are radio, television, printed material and agricultural extension and [31] observed that men are able to purchase more assets including radio, mobile phones and TVs thereby increasing access to information.

Access to Inputs:

The study revealed that both men (78.1%) and women (61.9%) have access to inputs even though men are slightly on an advantage compared to women. The high cost of inputs may limit women's purchasing power. Similarly, [15] noted that because of the poverty level in some rural areas, women are unable to buy agricultural inputs such as improved seedlings and fertilizer. These inputs increase farm productivity and as emphasized by [32], improving access to modern agricultural inputs and technologies amongst women and men farmers is ideal for raising agricultural outcomes.



	Access to land	Access to financial credits	Access to Extension services	Access to markets	Access to innovation	Access to labour	Access to information	Access to inputs
Women	33.30%	28.60%	23.80%	96.70%	38.10%	65.10%	23.80%	61.90%
Men	93.10%	70.10%	54%	93.10%	67.80%	98.80%	64.40%	78.10%

Figure 1: Access to production resources

CONCLUSION

Women are mostly engaged in food crop production activities while men are dominated in cash crop activities. Men easily access production resources as compared to women. Enhancinng accessibility of men and women to production factors, innovations and information activates

commitment and determination to produce more. Moreover, bridging gender gaps in agriculture and improving participation in production through modification of cultural norms and values defining crops cultivated and agricultural activities performed by men and women are potential pathways to addressing issues of hunger, food insecurity and poverty.

References

1. Slätmo, E., Fischer, K. and Röös, E. (2017). The Framing of Sustainability in Sustainability Assessment Frameworks for Agriculture.*Sociol. Rural.* 57, 378–395.

2. Fanelli Ra M 2022: Bridging the Gender Gap in the Agricultural Sector: Evidence from European Union Countries *Social Science.* 2022, *11*(3), 105; https://doi.org/10.3390/socsci11030105

3. Wondimagegnhu, B.A., Huluka, A.T. and Nischalke, S.M. (2019). Determinants of Farm Livelihoods of Smallholder Farmers in Yayu Biosphere Reserve, SW Ethiopia: A Gender Disaggregated Analysis. *Cogent Economics.Finance* doi: 10.1080/23322039.2019.1645583

4. Asamu, F.F., Odagwe, M.C., Rasak, B., Arisukwu, O., Igbolekwu, C. and Oyeyipo, E.E. (2020) Gender Issues and Women's Participation in Agricultural Production in Warri South Local Government area of Delta State, Nigeria. IOP Conference Series*: Earth and Environmental Science.* doi:10.1088/1755-1315

5. Ankrah, D.A., Freeman, C.Y and Afful A. (2020) Gendered Access to Productive Resources – Evidence from Small Holder Farmers in Awutu Senya West District of Ghana *Scientific African* Vol 10 https://doi.org/10.1016/j.sciaf.2020.e00604

6. Gilligan, D.O., Kumar, N., McNiven, S., MeenakshI, J.V. and Quisumbing, A. (2020). Bargaining Power, Decision Making, and Biofortification: The Role of Gender in Adoption of Orange Sweet Potato in Uganda, Food Policy, https://doi.org/10.1002/app5.344

7. Kang, M., Schwab, B. and Yu J. (2020). Gender Differences in the Relationship Between Land Ownership and Managerial Rights: Implications for Intra-Household Farm Labor Allocation.*World Development*.Vol 125 https://doi.org/10.1016/j.worlddev.2019.104669

8. Peralta Alexandra (2022). The Role of Men and Women in Agriculture and Agricultural Decisions in Vanuatu.*Asia& the Pacific Policy Studies*9(1) pp. 59-80

9. FAO. (2020). Country Gender Assessment of Agriculture and the Rural Sector in Vanuatu. Retrieved from https://www.fao.org/publications/card/en/c/CA7427EN/

10. Lecoutere E, Spielman, D. J and Campenhout, B.V. (2023). Empowering Women Through Targeting Information or Role Models: Evidence from an Experiment in Agricultural Extension in Uganda*World Development*.: https://doi.org/10.1016/j.

11. Puskur, R., Mudege, N. N., Njuguna-Mungai, E., Nchanji, E., Vernooy, R., Galiè, A. and Najjar. D. 2021. MovingBeyond Reaching Women in Seed Systems Development. Washington, DC: CGIAR Gender

12. Aduwo, O. E., Aransiola, J. O., Ikuteyijo, L. O., Alao, O. T., Deji, O. F., and Ayinde, J. O. Adebooye, O.C. and Oyedele, D.J. (2019). Gender Differences in Agricultural Technology Adoption in Developing Countries: A Systematic Review. *ActaHorticult.* 1238, 227–238. doi: 10.17660/ActaHortic.2019.1238.24

13. Okunola, A. M. and Ojo, O.S. (2019). Household Poverty Measurement and its Determinants among Rural Farmers in Ondo State, Nigeria.*Poverty Public Policy* 11, 277–290. doi: 10.1002/pop4.262

14. Mfitumukiza, D., Barasa, B., Egeru, A., Mbogga, M.S., Wokadala, J., Ahabwe, A., Kasajja, S., Namususwa, Z. and Nabatta, C. (2020). The Role of Indigenous Knowledge (IK) in Adaptation to Drought by Agropastoral Smallholder Farmers in Uganda.*Indian Journal of. Traditional.Knowledge.* 19, 44–52.

15. Udemezue, J.C and Odia, F.N. (2021). Gender Disparities and Roles of Women in Agriculture in the South Eastern Nigeria.*Biomedical Journal of Scientific & Technical Research*36(4), pp 28788-2879

16. Adio and Oladele, (2021): Food Insecurity and its DeterminantsAmong Farming Households in Surulere Local GovernmentArea of Oyo State. *South Asian Research Journal of Agriculture and Fisheries,* 3(2), pp 10-16

17. Oladiran, J.O., Ogunniyi, L.T. and Fanifosi, G.E. (2020). Factors Influencing Market Participation among FoodCrop farmers in Oyo State: A Double Hurdle Approach.*South Asian Research Journal of Agriculture and Fisheries*. 2(4) pp85-92

18. Mensah, M. andFosu-Mensah, B. Y. Agriculture and Gender Roles in the Semi-Arid Region of Ghana *West African Journal of Applied Ecology*, vol. 28(1) pp144 – 157.

19. Akter, S., Rutsaert, P., Luis, J., Htwe, N.M., San, S.S., Raharjo, B. and Pustika, A. (2017) Women's Empowerment and Gender Equity in Agriculture: A Different Perspective from Southeast Asia. Food Policy, 69, 270-279.

20. FAO. (2020). Country Gender Assessment of Agriculture and the Rural Sector in Vanuatu. Retrieved from https://www.fao.org/publications/card/en/c/CA7427EN/

21. Siri.B.N., Nchanji, E.B and Tchouamo, I.R. (2020). A Gender Analysis on the Participation and Choice of Improved and Local Haricot Bean (Phaseolus vulgaris L.) by Farmers in Cameroon*. Agricultural Sciences*, 11, 1199-1216

22. Peralta Alexandra (2022). The Role of Men and Women in Agriculture and Agricultural Decisions in Vanuatu.*Asia& the Pacific Policy Studies*9(1) pp. 59-80

23. Tsige, M., Synnevåg, G., and Aune, J. B. (2020). Gendered Constraints for Adopting Climate-smart Agriculture amongst Smallholder Ethiopian Women *Farmers. Scientific African.* https://doi.org/10.1016/j.sciaf.2019.e00250

24. Gebre, G. G., Isoda, H., Rahut, D.B., Amekawa, Y., and Nomura, H. (2021). Gender Differences in Agricultural Productivity: Evidence from Maize Farm Households in Southern Ethiopia. *Geography Journal*, 86(2), 843–864. https://doi.org/10.1007/s10708-019-10098-y

25. Lecoutere E, Spielman, D. J and Campenhout, B.V. (2023). Empowering Women Through Targeting Information or Role Models: Evidence from an Experiment in Agricultural Extension in Uganda*World Development.*: https://doi.org/10.1016/j.

26. Neway M.M. and Zegeye, M.B. (2022) Gender Differences in the Adoption of Agricultural Technology in North Shewa Zone, Amhara Regional State, Ethiopia. *Cogent Social Sciences* doi.org/10.1080/23311886.

27. Belay, M., &Mengiste, M. (2021). The Ex-Post Impact of Agricultural Technology Adoption on Poverty: Evidence from North Shewa Zone of Amhara Region, Ethiopia*. International Journal of Finance and Economics*. 1–11. https://doi.org/10.1002/ijfe.2479

28. Minh T.T., Cofie O., Lefore N., Schmitter P. (2020). Multi-stakeholder Dialogue Space on Farmer-led Irrigation Development in Ghana: An Instrument Driving Systemic Change with Private Sector Initiatives. *Knowledge.Management and. Development.Journal.15*(2) pp 98–118

29. Pierotti, R.S., Friedson-Ridenour, S. and Olayiwola, O. (2022). Women Farm What They Can Manage: How Time Constraints Affect the Quantity and Quality of Labor for Married Women's Agricultural Production in Southwestern Nigeria.*World Development*doi: 10.1016/j.worlddev.2021.105800

30. Taku, D.J., Njoh, R. N., Meliki, N. S., Amungwa, F. A. and Manu I. N. (2020) The Role of Agricultural Extension in Cocoa Production and Livelihood of Farmers in Meme Division, Cameroon*Asian Journal of Agricultural Extension, Economics & Sociology* 338(11): 58-65

31. Summers, K.H. Baird, T.D., Woodhouse, E., Christie M.E., McCabe J.T., Terta F. and Peter, N. (2020) Mobile Phones and Women's Empowerment in Maasai Communities: How Men Shape Women's Social Relations and Access to Phones.*Journal of Rural Studies*, 77 pp. 126-137. 10.1016/j.jrurstud.2020.04.013

32. Makate, C. and Mutenje, M. (2021). Discriminatory Effects of Gender Disparities in Improved Seed and Fertilizer Use at the Plot-Level in Malawi and Tanzania.*World Development Perspectives*Vol 23 https://doi.org/10.1016/j.wdp.2021.100344