World Academy of Science, Engineering and Technology
International Journal of Environmental and Ecological Engineering
Vol:18, No:03, 2024

Gender-Specific Vulnerability on Climate Change and Food Security Status - A Catchment Approach on Agroforestry Systems - A Multi-Country Case Study

Authors : Zerihun Yohannes Amare Id, Bernhard Freyer, Ky Serge Stephane, Ouéda Adama, Blessing Mudombi, Jean Nzuma, Mekonen Getachew Abebe, Adane Tesfaye, Birtukan Atinkut Asmare, Tesfahun Asmamaw Kassie

Abstract : The study was conducted in Ethiopia (Zege Catchment) (ZC), Zimbabwe (Upper Save Catchment) (USC), and Burkina Faso (Nakambe Catchment) (NC). The study utilized a quantitative approach with 180 participants and complemented it with qualitative methods, including 33 key informant interviews and 6 focus group discussions. Households in ZC (58%), NC (55%), and US (40%) do not cover their household food consumption from crop production. The households rely heavily on perennial cash crops rather than annual crop production. Exposure indicators in ZC (0.758), USC (0.774), and NC (0.944), and sensitivity indicators in ZC (0.849) and NC (0.937) show statistically significant and high correlation with vulnerability. In the USC, adaptive capacity (0.746) and exposure (0.774) are also statistically significant and highly correlated with vulnerability. Vulnerability levels of the NC are very high (0.75) (0.85 female and 0.65 male participants) compared to the USC (0.66) (0.69 female and 0.61 male participants) and ZC (0.47) (0.34 female and 0.58 male participants). Female-headed households had statistically significantly lower vulnerability index compared to males in ZC, while male-headed households had statistically significantly lower vulnerability index compared to females in USC and NC. The reason is land certification in ZC (80%) is higher than in the US (10%) and NC (8%). Agroforestry practices variables across the study catchments had statistically significant contributions to households' adaptive capacity. We conclude that agroforestry practices do have substantial benefits in increasing women's adaptive capacity and reducing their vulnerability to climate change and food insecurity.

Keywords : climate change vulnerability, agroforestry, gender, food security, Sub-Saharan Africa
Conference Title : ICEB 2024 : International Conference on Ecosystems and Biodiversity
Conference Location : New York, United States
Conference Dates : March 18-19, 2024