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## Strategies for implementing gender-transformative sustainable agricultural mechanisation within smallholder agriculture production

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### Abstract

Agriculture is a vital industry that provides livelihoods to millions of people worldwide. The farming community relies on natural and man-made resources, such as land and farm machinery, to produce the food that sustains us. However, social and cultural norms surrounding agricultural production can result in an uneven distribution of essential resources necessary for sustainable agricultural mechanisation. Sustainable agricultural mechanisation (SAM) is a farming practice that uses appropriate machinery to remove drudgery, enhance agricultural production efficiency, and be economically and environmentally friendly. Promoting equality among farmers and advocating for SAM is crucial to ensuring fair and sustainable farming practices. Therefore, it is necessary to adopt gender-transformative approaches to promote inclusive and sustainable agricultural mechanisation. This will help remove gender barriers and support women, who play a crucial role in agriculture, in accessing and adopting mechanisation practices. Quantitative and qualitative data were used to understand gender dynamics in machinery acquisition, access, and utilisation by smallholder farmers in Asutsuare, Ghana. The study utilises quantitative data from 320 farmers and qualitative data from key informant interviews and focus group discussions to emphasise the need for a gender-transformative approach to sustainable agricultural mechanisation. The data analysis revealed differences in machinery access, intention to use machinery, and projected benefits among gender and age groups. The presentation presents a framework and strategies for promoting gender-transformative sustainable agricultural mechanisation and highlights their practical implications. These strategies foster gender equality, sustainable agriculture, and socio-economic and eco-friendly practices through mechanisation. The strategy and framework proposed, when implemented, will make significant strides towards a more equitable and sustainable agricultural sector.

**Keywords:** Agricultural production, gender-transformative agriculture, smallholder farmers, sustainable agricultural mechanisation