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Socio-environmental drivers of local knowledge of climate change risk and woody species as fertilisers in Benin western Atacora (West Africa)

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Abstract

Over the world, though climate change is threatening the human population, agroforestry through tree preservation is among the farming systems promoted to cope with such threats. Moreover, the risk of climate change may depend on socio environmental factors and consequently local people may not perceive in the same way the risk among different environment conditions. Though, one of the roles accomplishing by woody presence in cropping systems is their contribution to fertilisation, many local people may not perceive such knowledge. According to the protection motivation theory, we suggested that local people who perceive more the risk of climate change may more know and preserve woody as fertilisers in their cropping systems. The present study was conducted in western Atacora of Benin republic and aims to assess socio environmental drivers of local knowledge of (i) climate change risk and (ii) woody as fertiliser in traditional agroforestry parklands. The study zone experiences mostly natural resources degradation and therefore local people are more vulnerable to climate change, food insecurity and hunger. We used a random sampling technique to select 360 households' heads. Canonical and principal component analyses were used to characterise the environmental traits of the location of the selected farmers. Binomial logistic regression was used to assess the drivers of farmers' knowledge. The results showed that the local people in drier areas perceived the risk of climate change more than those in humid areas. Climate change risk perception, age, and membership in a farm organisation are the main drivers of the perception of woody as fertiliser as well as woody fertiliser preservation. The farmers belonging to a farm organisation and who preserve woody as fertilisers perceive the risk of climate change more than the opposite scheme, which results confirmed the protection motivation theory. The findings are helpful tools to sensitize the local people on climate change risk and the way to cope with the risk with woody species in agricultural lands.

Keywords: Agroforestry parklands, climate change risk, local ecological knowledge, woody fertilisers

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