**Does Agricultural Innovation improve livelihood Outcomes among Smallholder farmers in Rural Nigeria?**

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Sustainable livelihood strategies, which are agricultural innovation system driven; mainly target potential opportunities for poor households to have access to market and to engage in strategic decision making pertaining to development of their agri-business and the scarce resources at their disposal. As a result, there has been a shift in the research paradigm in many developing countries like Nigeria; from top down research systems to nonlinear dynamic systems that aim to enhance end users capacity to obtain and utilize knowledge and research outputs. The aim of this paper was therefore to assess the extent to which the use of these innovative agricultural research interventions (improved cassava stem cuttings) impact upon the livelihood outcomes of rural smallholder farmers in Nigeria. With the aid of propensity score matching as a means of establishing a valid counterfactual and single differencing to measure impact, it was established that rural incomes and output are significantly impacted upon by agricultural research interventions that are driven by agricultural innovation systems concept. It was also discovered that participating households had better livelihood outcomes and more diversified income portfolios during the implementation of the innovative research intervention as a result of greater linkages to markets and capacity building opportunities. Phasing out of the research program would therefore reduce the diversity of income portfolios and growth potentials of rural livelihoods. Agricultural research interventions that are driven by agricultural innovation system concepts therefore have the potential to positively impact the livelihood outcomes of rural smallholder farmers in Nigeria. However, there is need for greater capacity building of local extension agents and increased budgetary support to ensure understanding and application of agricultural innovation system concepts by local level public agricultural extension agents to sustain positive livelihood outcomes. In addition agricultural innovation system concepts should be mainstreamed in all public agricultural extension and research programs to ensure sustained rural innovation and improved livelihood and improved productivity outcomes.

**Key words:** Agricultural Innovation Systems, Livelihoods, Productivity, Smallholder’s farmers.