

Institutional and Governance Challenges in an Emerging Bio-economy: A Case Study of Maize Value-Webs in Nigeria

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Maize is one of the most important cereal crops in Nigeria. It is particularly important for the poorer citizens and smallholders for food security purposes. Agricultural policies in Nigeria have conventionally focused on enhancing food production. However, growing challenges of sustainable development require a shift in the conventional thinking of considering agricultural sector as only the supplier of food. It is increasingly becoming a 'supplier of biomass', which caters to multiple demands of food and non-food purposes. Recent advances suggest that it is pertinent to look beyond conventional value chains to a more holistic 'value web' because the same crops find diverse usages in the biomass-based economy. Growing challenges of sustainable development require a shift in the conventional thinking of considering agricultural sector as only the supplier of food. It is increasingly becoming a "supplier of biomass", which caters to multiple demands of food and non-food purposes. Traditionally, the analysis of biomass sector has been dominated by value chain studies.

Recent advances suggest that it is pertinent to look beyond conventional value chains to a more holistic "value web" because the same crops find diverse usages in the biomass-based economy. The value web approach adopted in this study helps in identifying the potential innovative opportunities in the maize sector beyond the focus on food. The value web also helps to show how maize is used locally by households as well as industrial sector, and the disconnects in the flow due to the current institutional structure. More so, recent governmental policies have been geared towards increasing the production of priority crops like maize in the country to meet such potentials. For this, the government has employed the innovative Growth Enhancement Support (GES) scheme as a means of eliminating governance challenges in the procurement and distribution of innovative materials like inputs to smallholder farmers.

The study employs focus group discussion and uses innovative participatory net-mapping tool to elicit information on how maize biomass flows, the institutional environment responsible for the distribution of innovative ideas and materials in the sector, and the GES scheme. The study found that marketing problem arising from pest and chemical residues e.g. aflatoxin is a major constraint for maize utilization by industries producing human consumables. Food and drink industries source for maize grains only from the northern part where aflatoxin infestation is minimal. Extensive means of disseminating information to smallholders is through Agricultural Development Program (ADP) and Maize

Association of Nigeria (MAAN). However, smallholder farmers who are not linked to MAAN are disadvantaged. Inconsistent financial support to the national research institutes and ADP is a major problem affecting the sector's institutional structure.

The study suggests that government should consistently finance ADP and national research institutes while research effort into aflatoxin eradication and local use of maize biomass should be increased. Linkages between state governments and national research institutes as well as between small-scale farmers and MAAN should be made stronger. Furthermore, the study found that governance challenges still persisted in GES, preventing fair distribution and utilization of technological resources made available by the government to the smallholder farmers. Corruption and leakages are rampant between redemption centers and before targeted farmers use the inputs. The study suggests a more consistent support from governments (federal and state) to the sector and to GES. Furthermore, the government should continue with GES while blocking points of corruption and leakages through consistent periodic reviews. The Government should also provide more incentives for targeted smallholder farmers to use these resources.