

Unlocking the Economic Potential of Rural Ethiopia: How Roads Can Change Livelihoods

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Summary: *This study examined the role of roads in enhancing agricultural household's net farm income and explored plausible mechanisms related to their labour and output market participation decisions. Accordingly, the findings reveal that living within two kms to tar/asphalt road significantly increases agricultural commercialization. Similarly, agricultural households spend more hours in off-farm activities if they reside within two kms to tar/asphalt road. The results shed light on the importance of road infrastructure to promote agricultural commercialization and livelihood diversification of agricultural households, and ultimately enhance household income in rural Ethiopia.*

Background

Agricultural commercialization and off-farm employment entail physical access to markets and actual market participation (purchase of agricultural inputs, sale of agricultural products and off-farm labour allocation). As such, there is a huge potential to boost rural household income through increased participation in agricultural and off-farm labour markets (Wakeyo et al., 2017; ILRI, 2020). However, most agricultural households in Ethiopia are poorly connected (Jemal and Genet, 2019; Gebresilasse, 2023).

Based on the fourth wave of the Ethiopia Socioeconomic Survey (ESS4) data, the percentage of rural population living within two kms of tar/asphalt road is only 18 percent. The 2019 data from World Economic Forum on quality of roads also show that the score for Ethiopia is lower than the average for SSA, consisting of 34 countries. This can be a major challenge to agricultural households' market participation and diversification of employment.



Photo source: [MONITOR File Photo](#)

Key messages

- ✓ Agricultural households' access to quality roads promotes their market participation and off-farm employment.
- ✓ Market participation increases household net farm income.
- ✓ Both market participation and off-farm employment of agricultural households enhance their per capita real consumption expenditure.
- ✓ Investments in infrastructure to expand rural road accessibility would ultimately result in increased household income and welfare through improved agricultural commercialization and livelihood diversification in rural Ethiopia.

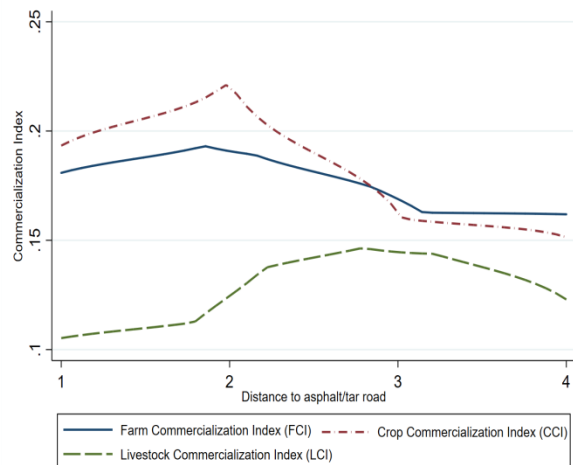
Methods

The analysis uses the fourth wave of the Ethiopia Socioeconomic Survey (ESS), a nationwide household survey data consisting of a representative sample of over 3,000 agricultural households. The seemingly unrelated regression (SUR) and recursive bivariate regression (RBR) models were used to conduct rigorous analyses on the relationship between quality roads and household income and welfare in rural Ethiopia.

Roads promote Agricultural Commercialization

Agricultural households' access to rural road infrastructure directly translates into improved agricultural commercialization, particularly for crop producers (see Figure 1).

Figure 1: Agri. commercialization and distance to road

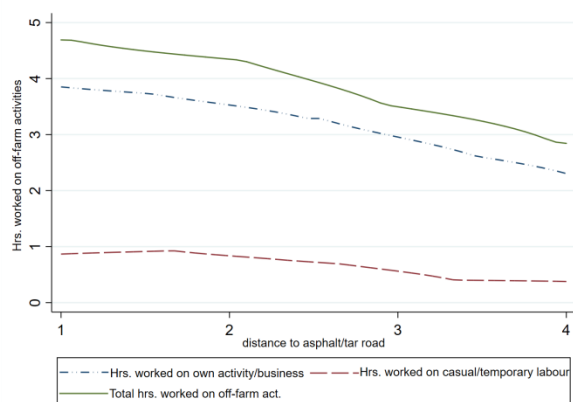


For agricultural households, living within two km of asphalt/tar road is associated with on average around a **five percentage point increase in agricultural commercialization**. Making tar/asphalt roads accessible within two kms to all agricultural households would **increase their commercialization by around 30%** (CI of 22% when households can access tar/asphalt roads within two kms compared to the counterfactual scenario of 17% when they cannot).

Roads Boost Off-Farm Employment

Rural roads also significantly increase agricultural households' engagements in off-farm employment (see Figure 2).

Figure 2: Off-farm employment and distance to road



Agricultural households that live within two kms to tar/asphalt road spend on average around **three additional hours per week on off-farm employment** compared to those living beyond two kms to asphalt/tar road. Therefore, enhanced rural connectivity can play a critical role in promoting livelihood diversification of agricultural households to enable them mitigate farm income variability that may arise due to production or market risks.

Roads Enhance Household Income and Welfare through Commercialization and Off-Farm Employment

Agricultural commercialization is positively associated with both net farm income and per capita real consumption expenditure of households. The income gains of agricultural commercialization to agricultural households can be through increasing revenue from sale of farm products and/or reducing costs of production by improving access to agricultural inputs. This can enable agricultural households to make additional expenditure on basic goods and services.

Agricultural households are found not to reinvest their off-farm income on farm activities to enhance their net farm income. Furthermore, off-farm employment may compete for available household labour that can be utilized for farm activities, and this may also have adverse consequences on farm income. As such, access to quality roads affects agricultural households' net farm income through their market participation, but not through their livelihood diversification. Agricultural households use the income they generate from off-farm employment to purchase basic goods and services from the market to meet household consumption needs.



Photo source: [rusticus80/flickr](https://www.flickr.com/photos/rusticus80/)

Numerically, the net farm income of agricultural households in Ethiopia **increases by 0.243 percent for a one percent increase in their agricultural commercialization**. Net farm income in rural Ethiopia can increase by around 25% if households double their market participation. Better yet, rural household income in Ethiopia can be doubled if agricultural households' market participation is quadrupled. This is doable as agricultural households in Ethiopia are selling on average around 20% of their agricultural production.

Conclusion and Policy Implication

Access to quality roads contributes towards promoting households' agricultural commercialization and participation in off-farm activities in rural Ethiopia. In turn, agricultural commercialization and off-farm employment significantly enhance household welfare.



Photo source: [YENCOMAD File Photo](#)

Based on these findings, a direct action would be public investments in infrastructure to expand rural road accessibility and connectivity, which would translate into improved participation in agricultural and off-farm labour markets, and ultimately enhance rural household income and welfare in Ethiopia.

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