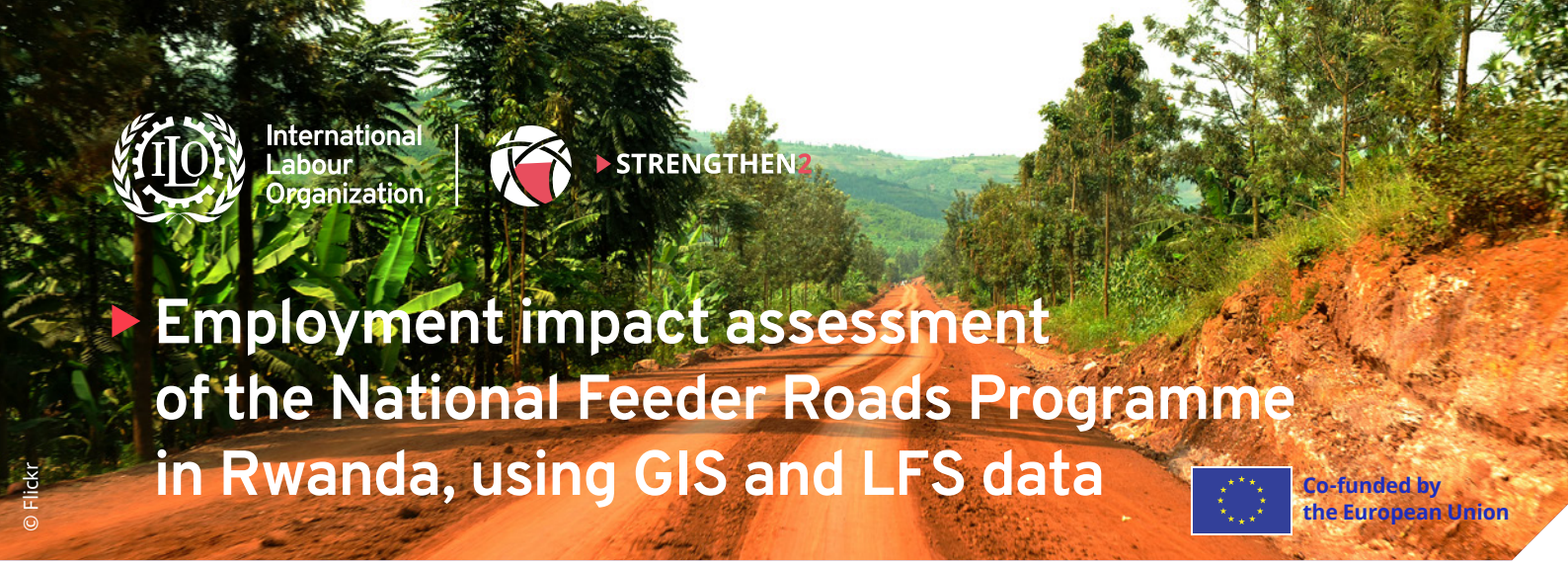


International Labour Organization

STRENGTHEN2

Employment impact assessment of the National Feeder Roads Programme in Rwanda, using GIS and LFS data

© Flickr

Co-funded by the European Union

Project Background

The National Feeder Roads Programme (NFRP) aimed to rehabilitate 700 km of rural roads and maintain a further 500 km, across seven districts in Rwanda. The programme sought to increase economic growth, local employment and access to basic services.

STRENGTHEN2 is a joint initiative of the European Union and International Labour Organization with the overall objective of leveraging employment impact assessments to promote the creation of more and better jobs in sub-Saharan Africa. This brief outlines the results of an ex-post employment impact assessment of the National Feeder Roads Programme in Rwanda.

Methodology

This assessment is a follow-up to the previous EmpIA of the NFRP, using night-time lights (NTL) data to assess the economic and employment impacts of the project. This analysis aims to be compared to the NTL methodology and sought to further break down employment effects that could not be captured with NTL data, which presented changes in lights, GDP and employment. This assessment used labour force survey (LFS) data to assess the sectoral employment, wages and working time impacts of the rehabilitated roads.

A difference-in-differences (DID) approach with area and time fixed-effects was applied to measure the employment impact on individuals living in villages within 2.5 km off rehabilitated roads. This was compared to those located near similar non-rehabilitated roads who served as the control group. Panel LFS data was used for the years 2017, 2018 and 2019, in collaboration with the National Institute of Statistics Rwanda (NISR).

The analysis covered employment status, sector of employment, wages, working hours, and was disaggregated by gender. Age and level of education were applied as controls.

Sector

Transport

Feeder road rehabilitation

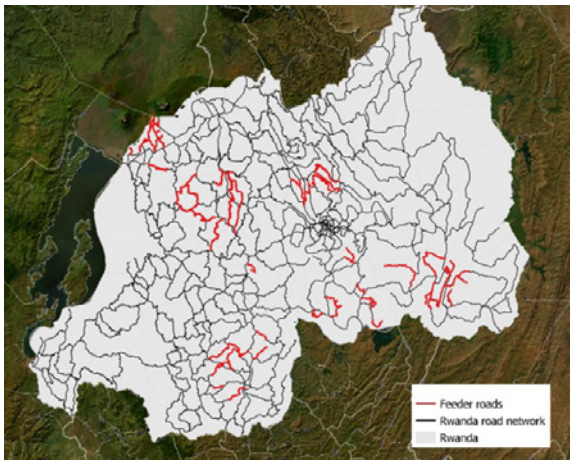
Financing

40 million euros

between **2013** and **2017**

Objectives

1. Connect areas of high agricultural potential with the market, to increase economic growth and improve food security.
2. Improve access to basic economic, social and financial services for the local population.



Results

Employment

The assessment using nighttime lights found:

Local GDP

0.8-1.1%

estimated local increase 1 – 4 years following completion

Employment

0.3-0.4%

estimated local increase 1 – 4 years following completions

Using the LFS data, changes in total employment were small and statistically non-significant- However,when breaking down by sector and gender, the following impacts could be observed:

- **Agricultural employment**

5%

Driven by an increase in female employment

- **Industry employment**

10%

Driven by an increase in male employment

Daily Wages

8.5%

Total increase

13%

Male increase

Working time*

8%

Total increase

10%

Female increase

Age & Education

Years of schooling and age have a positive impact on employment outcomes

*Working time is represented as the average daily hours of work

Recommendations

- The benefits across male and female employment were uneven, with male wages increasing and a rise in male employment in the industry sector. To maximize the impact of investments in roads, particularly for women, it is recommended to integrate complementary programmes such as vocational training and gender-sensitive employment initiatives to address gender disparities.
- The analysis found little effect on overall employment but shifts in sectors and increases in wages. This suggests that feeder roads contribute to structural transformation rather than large-scale employment growth. This is in line with findings from the previous study using NTL data, where employment effects were small and suggests that changes in employment can take longer to materialize, highlighting the importance of long-term monitoring of investments.
- The use of LFS data provided a more detailed understanding of changes in employment composition compared to the analysis with satellite NTL data. Going forward, it is recommended to use a mixed-methods approach where LFS data is available in future EmpIAs to capture changes in economic and employment outcomes.

Contact details

International Labour Organization
Route des Morillons 4
CH-1211 Geneva 22
Switzerland

T: +41 22 799 7861
E: STRENGTHEN2@ilo.org
E: EMPINVEST@ilo.org

ilo.org/strengthen2

Full report