Consultancy Services: For Impact Assessment of the Universal Rural Roads Access Program (URRAP) Ethiopia

Group 1: Amhara, Tigray, SNNP and Benishangul-Gumuz Regions

An Outline of Status of the Preparatory Phases of the Assignment

Presented at the Impact Evaluation Workshop
Debrezeit, Ethiopia

December 09-12, 2014

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Outline

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2. URRAP–Ethiopia in Brief
3. The Terms of Reference (TOR)
4. Methodological Outline and Status of Preparatory Activities
5. Organization and Staffing
6. Work Schedule
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1. Background

1.1 Recognition of the Critical Problem of Rural Isolation

1.2 The Sub-Saharan Africa Transport Policy Program (SSATP)

- Isolation – a critical constraint to rural development
- Valuable Investigative Work and Lessons
- “Wasted Time: The Price of Poor Access”
  Edmonds for ILO– provided a graphic description of the link between isolation and poverty.
- Deficit in rural access manifested in various ways and forms.
- The Rural Transport Trap (Fig 1)
Figure 1: The Rural Transport Trap

Transport Trap in rural areas.

SSATP provided valuable policy direction and options in the way forward—“The Rural Travel and Transport Program” (RTTP).

Key Question—How could Road Investments result in sustained improvements in accessibility (not just mobility)? Rural accessibility broader than rural roads.

Rural Connectivity: A Holistic Approach
In Transport Research Circular E–C 167
The Promise of Rural Roads, States:
Rural road (RR) connectivity in many aspects is analogous to information technology (IT) connectivity and the growing synergy between them offers new possibilities for enhancing rural accessibility and livelihoods through balanced and complementary investments in electric power, renewal energy, roads, ICT, IMT, and conventional transport services.

Key linkages between MDGs and Road Transport Infrastructure and Services.

Rural Access and Sustainable Livelihoods: the Asset Polygon.


More recent emphasis on Sustainability and Livability.
1.3 The Ethiopian Case

- In early 1990’s Government of Ethiopia gave great attention to establishing objectives and series of procedures (strategies) to reach chosen objective to address problem of isolation:
  - Low road coverage;
  - Inadequate rural transport services;
  - Gaps in policy, institutional arrangement, etc..., and
  - Gaps in local experience – planning, design, work methods...etc.

- Rural Road and Transport Strategy Formulated and Adopted by Stakeholders.

- 1997 The Road Sector Development Program (RSDP) Formulated– Instrumental in bringing about changes towards addressing the major issue of rural isolation.
The Formulation of Ethiopian Rural Travel and Transport Program (ERTTP), as component of ERTTP—based on key principles of multi-sectoral and integrated intervention and decentralization.

Various preparatory activities carried out:

- Support provided by DFID (UK) and Ireland Aid.
- World Bank, ILO—also rendered technical inputs.

Eight Pilot ERTTP Weredas—multi-sectoral interventions.

Wereda Integrated Development Plan (WIDP) Studies GOE, World Bank, ADB, etc..

URRAP – Ethiopia Formulated and Implementation in Progress.

URRAP–Program Document established the motivation for Impact Assessment.
1.4 The Essence of Impact Assessment

(I) – As far back as late 1970’s and 1980’s concern with rural poverty – multi-dimensional nature and complexity of rural society.

(II) – The shift in Development Thinking– Changes in Quality of Life as Ultimate Objective, and the Poor as the Focus of Development, rather than Physical Output.

(III) – Theory of Impact Evaluation Derived From Biological Experimentation.

(IV) – Fundamental Question– How to Establish Whether Results (Outcomes and Impacts) can be assessed and infer that Program/Project Outputs and Activities are Responsible.
(V) – The Basis and Analytical Approach to Evaluate Impact—Systematically Tracking Changes in Livelihoods and essentially Livability, among beneficiaries, flowing from and attributable to Programs/Projects.

(Vi) – Why Impact Assessment?

Basically to:

- Evaluate Relative Efficacy of Interventions;
- Document evidence–based lesson learning;
- Institutionalize/main stream best practice;
- Establish a framework for governance accountability for decision making; and
- Contribute to global knowledge.
(Vii) – Most Important and Difficult Step in Impact Evaluation—critical to approach and methodology:

- Determining the basic questions.
- Basic Questions in Impact Evaluation.
  - What changes in Outcomes/Impacts have there been since program inception?
  - Have the Outcomes/Impacts changed in a significant way as a result of program outputs and activities?
  - If so, in what direction and to what extent/magnitude?; and
  - why—causal relationships.
  - What differences have the changes made to livelihood and livability?
(Viii) – Vast record of the essence, tools...etc on Impact Evaluation Yet, knowledge gap exists:

- Scope and methodology (Desk review), sampling, program matrix and indicators – information needs and keeping the focus of impact evaluation.

- Duration– the impact evaluation period.

- The main questions the evaluation should answer.

- Defining the sampling methods, developing and testing the survey instruments.

- Techniques and Survey Instruments (Data for the indicators).

- Study (Treatment) and control non-treatment areas.
Key Impact Evaluation Terms:

- Causality;
- Attribution;
- Counterfactual;
- Comparison group;
- Propensity score matching;
- Double Difference Method; and
- Statistical Significance.
2. The Universal Rural Road Access Program–(URRAP)– Ethiopia

2.1 Development Objective of URRAP – Ethiopia

“To free the country’s rural people from their access constraints, reduce rural poverty, improve welfare and opportunity, stimulate agro– productivity and shared growth, a growth in which poor people benefit.”

2.2 Mission of URRAP

“To connect all kebeles by all–weather road and provide year round access, and that all road infrastructure will be appropriate to meet the needs of the rural communities and will be affordable to build and maintain.”
2.3 Goal of URRAP

“Supporting achievement of the Millennium Development Goals, Targets and Development Objective Set Out in the Growth and Transformation Plan (GTP).”
3. The Terms of Reference (TOR)

The TOR drawn by ERA states that:

(i) The Objectives of the Consultancy Services is to Determine how rural welfare is changing with rural road interventions in comparison to the “without program/project” scenario.”

(ii) The Scope of the assignment is “to provide information on welfare of the beneficiaries from rural road interventions (pre-program baseline) and follow up on road/transport, socio-economic, socio-cultural, etc, based on a wide range of Outcome/Impact Indicators.”
(iii) As to methodology, the TOR requires:

- Credibly establish causality and attribute any changes to the construction of the rural roads.
- Design of evaluation should center around baseline (pre–intervention) and follow–up (post intervention).
- Selection of project and non–project areas.
- Identification and selection of appropriate controls through matched comparison technique.
- Sample study (treatment) – 25 percent from each of the four regions, and limited number of control areas.
Six survey instruments

- Classified Traffic Census Count Surveys;
- Transport Users Survey;
- Kebele Perception– Focus Group;
- Kebele Primary Data (Key Informants);
- Kebele Primary Data (Community Self Monitoring); and
- Change Process (Household Livelihood Questionnaire).
(iv) Reporting and Deliverables

- Inception Report
- Baseline Report
- Draft Impact Evaluation Report (Two Years)
- Final Impact Evaluation Report (Two Years)
- Comprehensive Final Report.

(v) Key Personnel

Team Leader, Survey Coordinator, Lead Data Analyst,…

GIS Expert and Environmentalist
4. The Consultant’s Methodology and Status of Progress

4.1 Overview of the Consultant’s Methodology

a) URRAP Ethiopia Impact Evaluation Model

Figure 2: URRAP Impact Model
Figure 2: URRAP Impact Model

Long Term Objective (Goal)

Indirect Outcomes
- Access to Health
- Access to Schools
- Agricultural Production
- Livestock Production
- Marketing
- Farm Sale Prices
- Agriculture Inputs
- Small Business

Cross Cutting
- Environment
- Road Safety
- HIV/AIDS
- Gender

Direct Outcomes / Intermediate Impact
- Traffic Volume
- Freight Rates
- Passenger Use & Charges
- Travel Time
- Connectivity
- Etc....

Outputs
- Improved Accessibility, Mobility, Efficiency, and Transport Service Delivery in a Safe & Environmentally and Socially Sustainable Manner
- Kilometers of Roads
- Drainage Facilities
- Slope Protection
- etc

Activities
- Clearing
- Excavating
- Material Production & Placing
- Sub-grade
- Sub-base
- Surfacing
- etc
b) Figure 3: URRAP, from Activities–via Outputs to Impacts

URRAP
- Situation & Definition
- Vision & Mission to improve accessibility and Mobility

URRAP for Improving the Situation

Program log-frame
- Goal
- Purpose
- Targets, etc.

Improved Livelihood
(social welfare)

Socio-economic Outcomes/Changes Resulting From Outputs

Carry Out the Program/Project

Input → Activities → Specific Project Outputs
(i) Consultant expanded tools for data collection
- a) Traders and  b) Market Integration Survey Questionnaires.
(ii) Indicators Defined precisely and tied to survey instruments.
- Direct Outcome/Impact Indicators
  (Road and Transport)
  - Accessibility to education
  - Accessibility to health
  - Accessibility to markets
  - Road Passability
  - Passenger fares and freight rates
  - Vehicle ownership
  - Vehicles travelled by type
  - Women in transport (use and ownership)
  - Expenditure on transport
  - etc…
Indirect Outcomes/Impacts

- Agriculture and Food Security
- Non-agricultural activities
- Employment and Income
- Health status
- Education status
- Traders
- Market Integration
- Political Participation
- Social Interaction
- Environmental and Road Safety.

(iii) Sampling

- Multi-stage purposive spatial sampling procedure (GIS mapping used) for selecting weredas, kebeles and households.
- To be validated during pre-test.
(iv) Econometric Impact Evaluation to be added– to compliment Descriptive Statistics.

(v) Area of Influence– the kebeles as centers of socio–economic activity system.

4.2 Status of Progress– Initial Phases of the Consultancy Services

(i) Inception Report Delivered

(ii) Survey Instruments finalized and translated– to be improved further after pre–test

(iii) Multi–stage purposive spatial sampling approach applied

Weredas selected by combining administrative and agro–ecological zoning (which relates to altitude range) and population distribution–GIS mapping used as a tool of sampling.
Kebeles selected based on location, population density and other considerations.

- 128 kebeles (Treatment)
- 28 kebeles (Control or Non-Treatment)

(To be refined by applying matching method in consultation with regions)

Sampling of households– Based on number of households within area of influence, their distribution and poverty status, and Male and Female –Headed.

To capture Outcome/Impact Outside Area of Influence Selected Survey Instruments to be administered at key settlements.
(iv) Statistical Database (FoxPro) set up and to be interactively used (GIS/GPS) and related statistical packages such as SPSS and STATA.

- Visual FoxPro – a Relational Database Management System (RDBMS) – that allows to work with several logically related tables of data simultaneously.

(v) Econometric Impact Evaluation to be used:

- To make the analysis more credible and rigorous.
- Identified key parameters – role of road access in income, agricultural productivity and transport cost.
- Possibly a double differenced reduced form equation and propensity scored double difference comparison.
(vi) GIS based– thematic mapping

- Tracking changes in accessibility– selected key Outcomes/Impacts (visualization).

5. Organization and Staffing

Figure 4: Organization and Staffing Plan of the Consultants’
Figure 3: Organization and Staffing Plan of the Consultants’

Team Leader (Teferra Mengesha)
- Secretary
- Logistics Facilitator
- Support Staff

Traffic Count Summarizer (1)
- Survey Coordinator (Assefa Addisu)

Lead Data Analyst (Tesfai Ghebretinsae)
- GIS Expert (1) Wondimagegn Sine Hailegiorgis
  - Asst. Data Analyst (1)
  - Asst. GIS Exp.
- Data Entry Personnel (14)
- Survey Interviewer (6)
- Traffic Count (2)

Survey Coordinator (Assefa Addisu)
- Environmentalist (Getahun Worku)

Regional Survey Coord. (1) Amhara (To be Named)
- Survey Supervisors (32)
  - Household Survey Interviewer (60)
  - Traffic Enumerator (36)

Regional Survey Coord. (1) Tegrai (To Be Named)
- Survey Supervisors (9)
  - Household Survey Interviewer (17)
  - Traffic Enumerator (10)

Regional Survey Coord. (1) Benshangul-Gumuz (To be Named)
- Survey Supervisors (5)
  - Household Survey Interviewer (9)
  - Traffic Enumerator (6)

Regional Survey Coord. (1) SNNP (To be Named)
- Survey Supervisors (34)
  - Household Survey Interviewer (60)
  - Household Survey Enumerator (37)
6. Work Schedule for Outstanding Activities

Baseline

(I) Pre – testing, recruitment and training
   of key field staff – January, 2015

(II) Survey implementation – February, 2015

(III) Data entry, processing and analyzing – March, 2015

(IV) Draft Baseline Report – April, 2015

(v) Final Baseline Report – May, 15, 2015
7. Conclusion

(i) Impact evaluation essential, but complex.

(ii) There is a large set of literature on Impact Evaluation.

(iii) Various approaches and methods to estimating Impact.

(iv) Setting up the counterfactual challenging.

(v) Determining comparison Group (Non–Treatment) Time Consuming and Difficult.– “Selecting good comparison groups on a priori grounds.”

[“vulnerability of findings to unobserved factors.”]

(vi) Important– The most appropriate number and characteristics of variables for Econometric Impact Evaluation!
(vii) Simple comparison of ex-post status compared against results from Econometric Technique not straightforward.

(viii) How to achieve balance between keeping the evaluation simple and rigorous—credibility is a real challenge.

(ix) Combining Quantitative and Qualitative Methods.

(x) How about the use of Participatory Methods?
The End