

Impacts of Road Projects on Environment & Recommended Mitigation Measures.

(Presented for Discussion)

December, 2008 E.C; Fogera Woreda, Woreta

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Key Words:- Road, Environment, Water shed, Degradation, subgrade, Terrain

1.INTRODUCTION

- Road:-

1. is a very vital infrastructure for every development as it creates accesses and mobility through a watershed.
2. Is a very destructive infrastructure if handled unfriendly
 - It creates new and aggravated water ways and
 - covers large portion of the watershed
 - New cuts and fills
 - deforestation
 - ✓ **Degrades Environment; soil, Farmland,**

2. Basic Road Design & Construction

Inputs & out puts

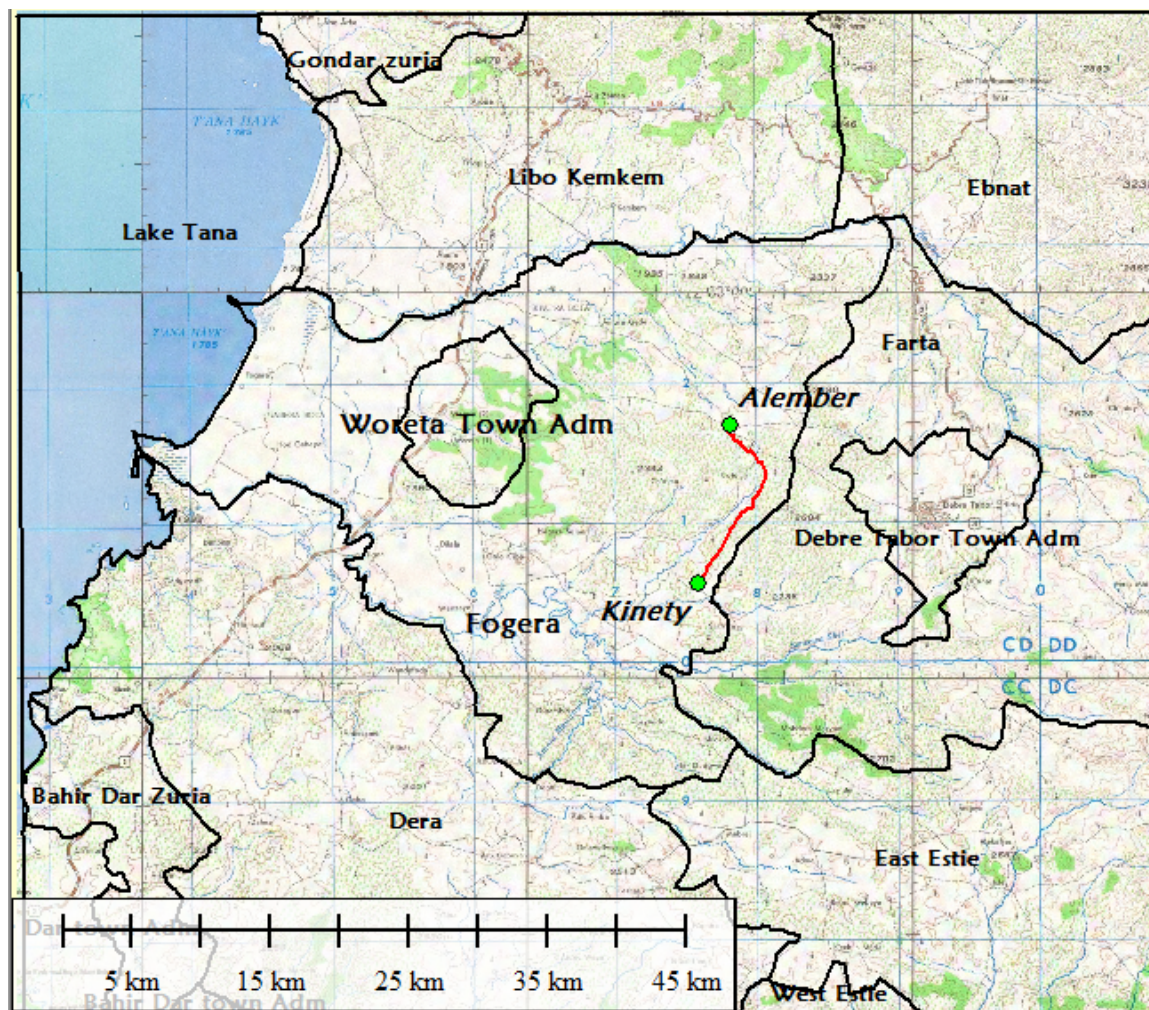
- 2.1 Watershed Characteristics

Catchment characteristics

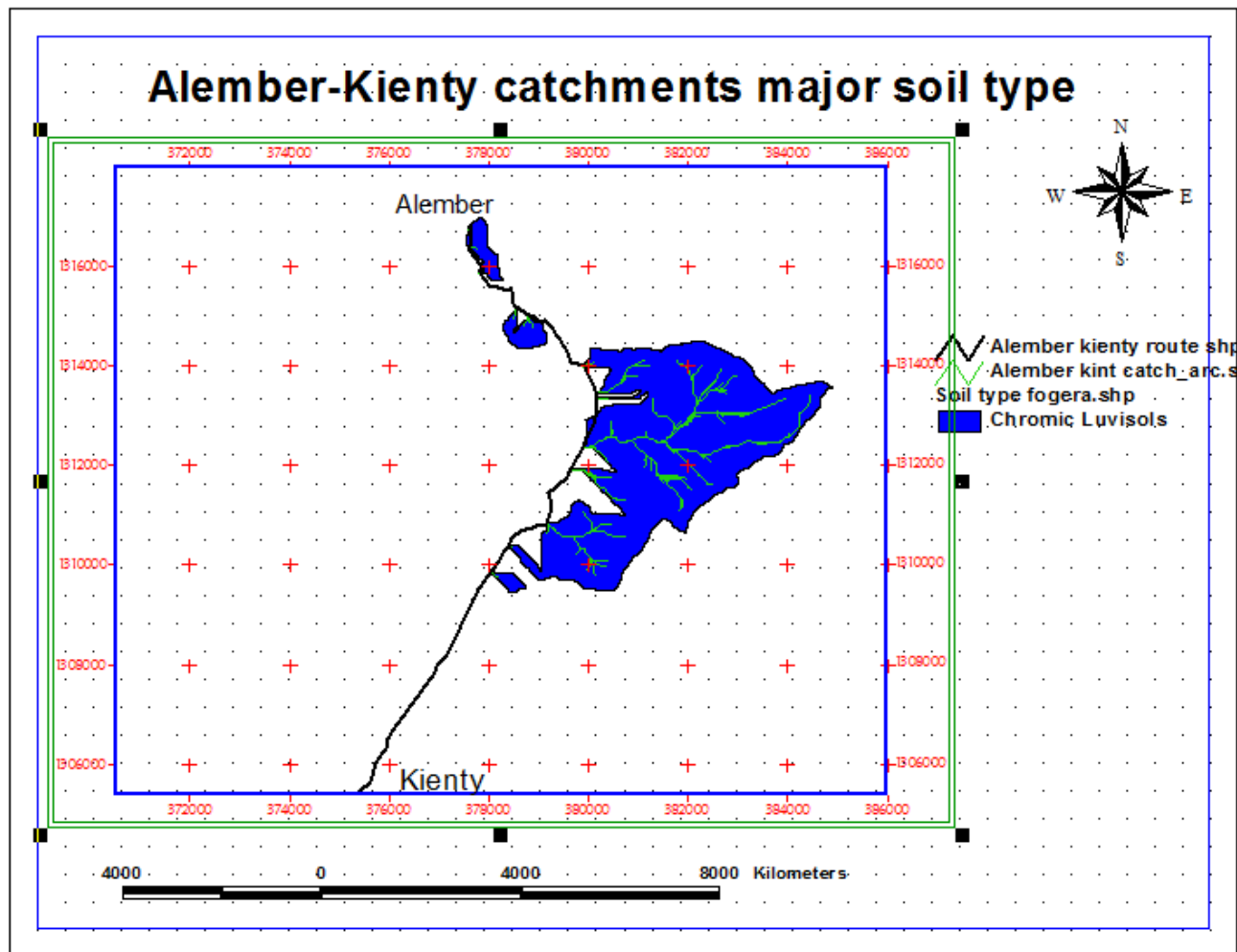
- ✓ Area
- ✓ Slope
- ✓ Land use
- ✓ Land cover
- ✓ Rain Fall Pattern & intensity

Objective/Out put

- To calculate discharge and determine opening sizes; bridge, culverts, side ditches



Alembert-Kinty Route catchments



2.2 Terrain Class

- Objective:- to determined flow velocity and to recommend;
 1. Safety recommendations
 2. **Appropriate conservation measures**
 - Flat <5%
 - Rolling <10%
 - Mountainous <25%
 - Escarpment >25%

2.3 Subgrade Soil Class

- **Objective:** to understand the sub grade soil strength and recommend;
 1. appropriate pavement thickness and
 2. possible conservation measures

2.4 Environmental Studies

- **Objective:** to understand future impacts due to the road project during both the construction and the road functioning period and propose the most accurate mitigation measures to minimize the negative impacts.
- Flood
- Erosion
- Displacement; settlement , land
- Deforestation
- Pollution; sound, water bodies,

3. Implementation Stage

- There are three main parties for the implementation of the road project.
 1. Client:- the owner of the project,
 - ✓ Source of fund and interest
 - ✓ Hires consultant and contractor to fill its technical gap.
 - ✓ Undertake construction of some components
 - ✓ Consists of Government officials, woredas, kebeles, villages and community inhabitants.
 2. Consultant:- undertake the study, design and contract administration works in favor of the client;
 3. Contractor:- execute the construction work as per the design and specifications.

4. Roll of the Client with respect to Conservation Work

- Rural Development Office and EPPLAU
- As per the design and study out puts,
- Slope protection Works
- Gulley protection
- Erosion control activities
- Water harvesting activities

Implementation & Monitoring Plan

- Environmental Impact Assessment Report is one of the outputs of the consultant study documents which includes implementation and monitoring plan of the road projects so that the construction will end up with environmentally friendly. The plan :-
 - ✓ identifies different activities that have negative impact
 - ✓ Provides possible mitigation measures
 - ✓ Assigns each activity for stakeholders for implementation

5. Conclusion

- All construction projects have negative impacts on the environment and these may be unavoidable but possible to minimize through appropriate and well studied mitigation measures.
- The implementation of each activity requires integration of different stakeholders taking their own tasks.
- On this respect the main problem is the different stakeholders specially at woreda level don't have better understanding to integrate their tasks to watershed concept.
- The different sectors plan their activities independently.



Road side Protection



Disturbed Land



