



Consequences of Negligence in Road Maintenance – An Estimate

Presented By

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Maintenance Needs Assessment & Road Financing Study, Ethiopia

The Study Theme

**Preserving the Growing Ethiopian Road Asset
&
Arranging Sustainable Fund**





Analytical Coverage

- **Valuation of Road Asset;**
- **Road Rehabilitation Cost;**
- **Higher Vehicle Operating Costs;**
- **Higher Road User Charges;**
- **Higher Transport Cost; and**
- **Road Safety Concerns**



Valuation of Road Assets

| Road Surface | Asset Replacement Value | Annual Maintenance Requirement | |
|-----------------|-------------------------|--------------------------------|------------|
| | | % of Asset Value | US\$/km pa |
| Asphalt (Paved) | 529,412 | 1.2% | 6,353 |
| Gravel Roads | 139,393 | 4.9% | 6,830 |
| Urban Roads | 281,144 | 1.6% | 4,498 |

Source: Sustainable Africa's Rural Road Networks, The Asset Management Approach (1999).

| Road Construction Cost (per km) | | US\$ 0.5 million (Average) |
|---------------------------------|----------|-----------------------------|
| Maintenance Cost (per km) | Periodic | US\$ 38,860/- every 8 years |
| | Routine | US\$ 1,329 (once a year) |

Source: Ethiopian Roads Authority (ERA).



Consequences of Negligence in Road Maintenance

| Without Maintenance the Loss of Road Assets | |
|--|------------------------------------|
| Road Type | Description |
| Bitumen Surfaced Roads | Will be unusable in 10-12 years |
| Gravel Roads | Normally of the order of 6-8 years |
| Earth Surfaced Roads | As little as 3-5 years |



Consequences of Negligence in Road Maintenance

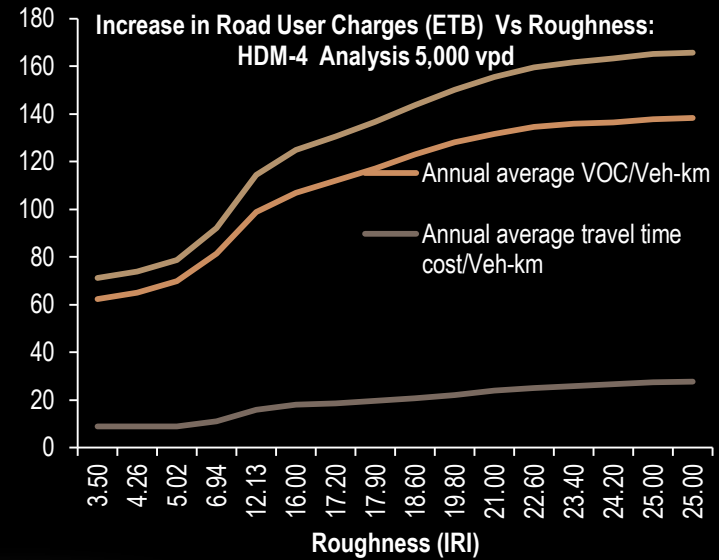
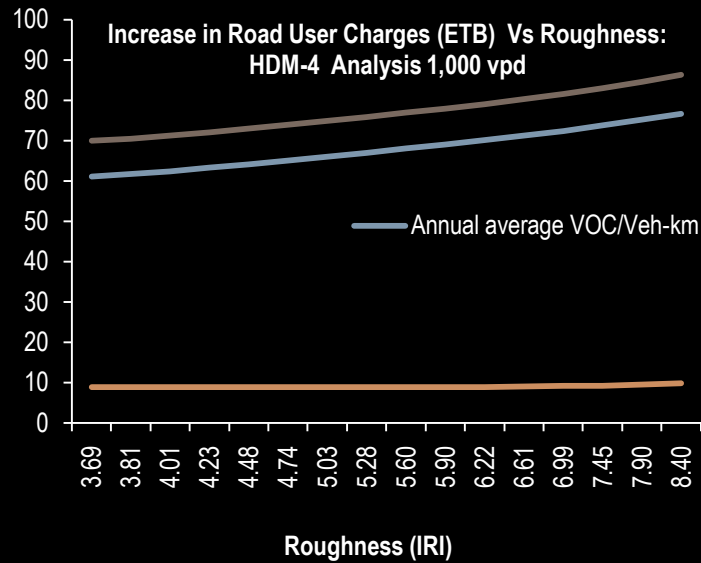
Results:

- ❖ **Asset Value after 10 years without maintenance = US\$ 1,738 million**
- ❖ **(after spending the maintenance cost on rehabilitation);**
- ❖ **Net Asset Loss*, due to “Non-Maintenance after 10 years” = US\$ (-) 2,100 million; and**
- ❖ **Rehabilitation: Maintenance Expenditure Ratio = 4.85.**

*Difference of: (i) Total Asset Value in: Year 1 (US\$ 3,839 mn.; & (ii) Year 10 (US\$ 1,738 mn.).



Higher Vehicle Operating Costs



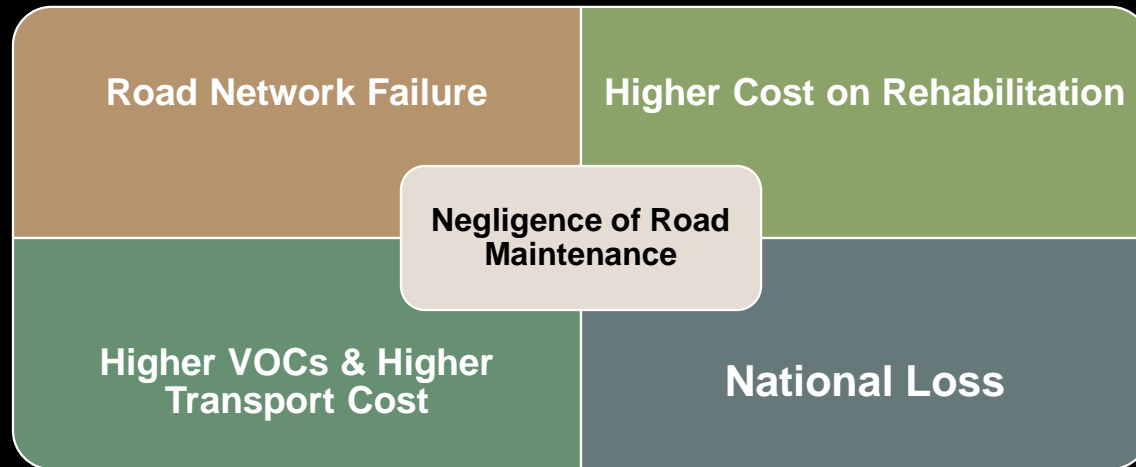


Negligence in Road Maintenance & Road Safety Concerns

- ❖ **Road Surface**
(Repeated Axle Load Movement Affects Pavement)
- ❖ **Traffic Control Devices**
(Considered as Lifeline for Road Safety)
- ❖ **Visibility**
(Direct Bearing on Safety of Road – Branches of Trees, etc.)
- ❖ **Drainage**
(Negligence of Lined / Unlined Drains & Grade Shoulders)

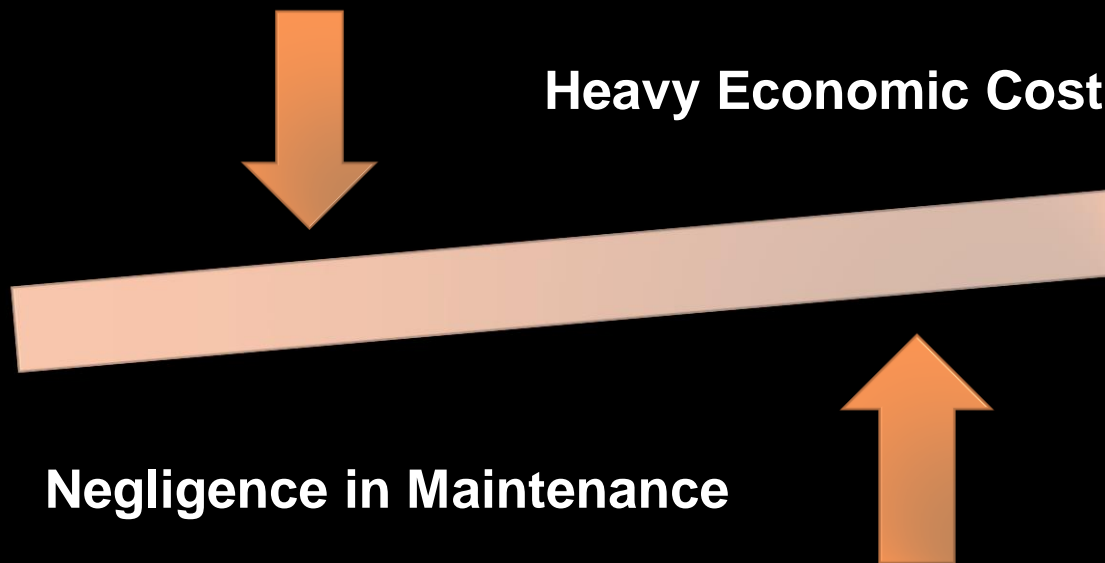


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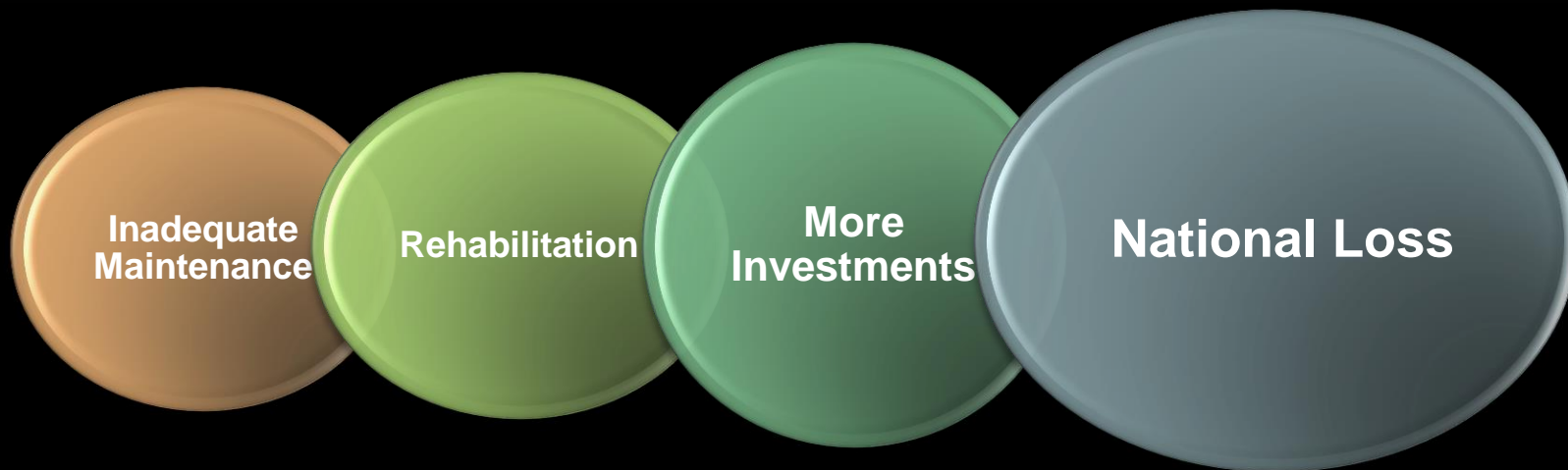


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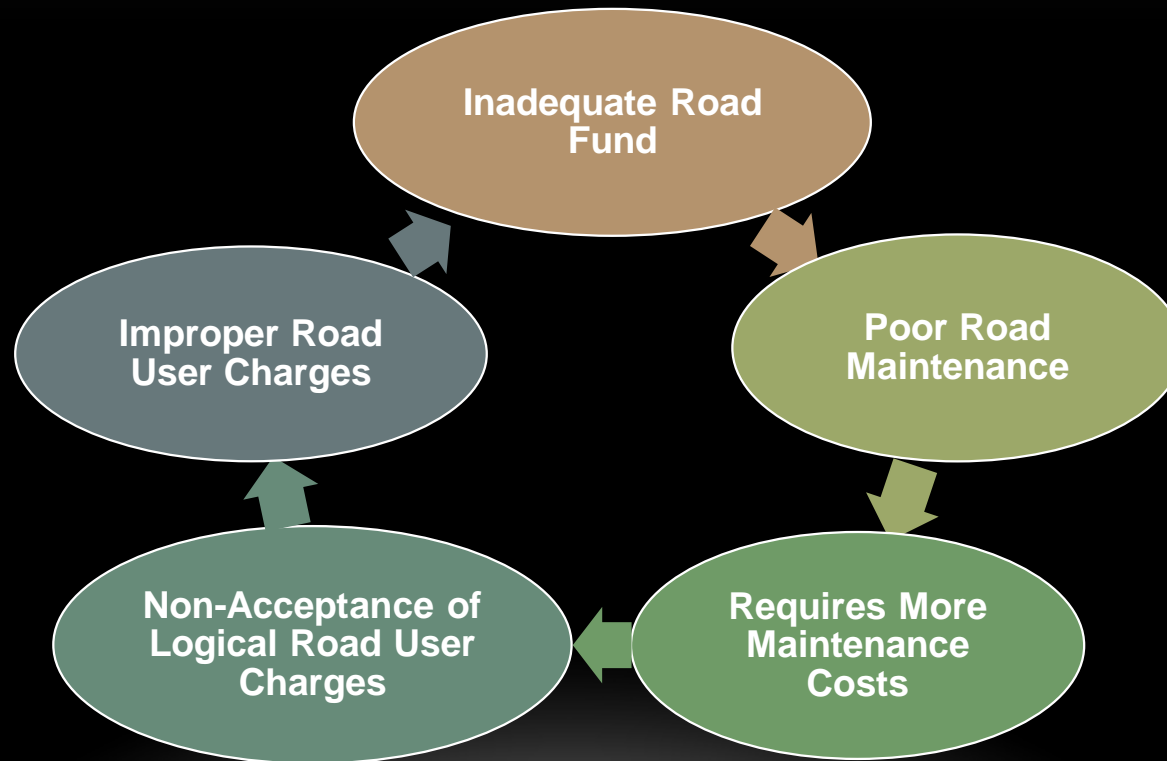


Consequences of Negligence in Road Maintenance





Higher Road User Charges





Issues & Challenges

Need for Road Maintenance:

- ❖ For Asset Preservation;
- ❖ Convenience to Road Users
- ❖ Efficient, Effective, Economic and Safe Transport System.

Constraints of Road Maintenance:

- ❖ Lack of Financial Resources / Sustainable Funding;
- ❖ Lack of Institutional Capacity / Capability.

Proper Advocacy for Road Maintenance:

- ❖ Need for Supporting Facts and Figures / Empirical Evidences;
- ❖ Need for Proper Estimation;
- ❖ Useful for Convincing Politicians and Decision Makers



Sum Up

Need for Proper Asset Management & Asset Preservation Proposition





Thank You...

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