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**UNPAVED ROADS IN CHILE: INTERNATIONAL
ROUGHNESS INDEX AS A PRIMARY FACTOR IN
MAINTENANCE CONTRACTS**

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Unpaved road network in Chile: a maintenance challenge

- Road network in Chile
- Budget decision
- Common task of the Latin America countries
- Modalities to the unpaved network maintenance





Sharing the road

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Proposal interest

- Maintenance policies should be focused on results (quality or level of service)
- The innovation in the maintenance strategies are allowed
- This situation may reduce maintenance costs
- Adequate standards coverage should increase in the roads network.



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PROPOSAL DEVELOPMENT

Proposal basis

- The contractor has the possibility to choose, to plan, to program and to apply intervention activities
- The road agency should then define and control the maintenance results.
- IRI is a well validated index used to express the road surface quality



PROPOSAL DEVELOPMENT

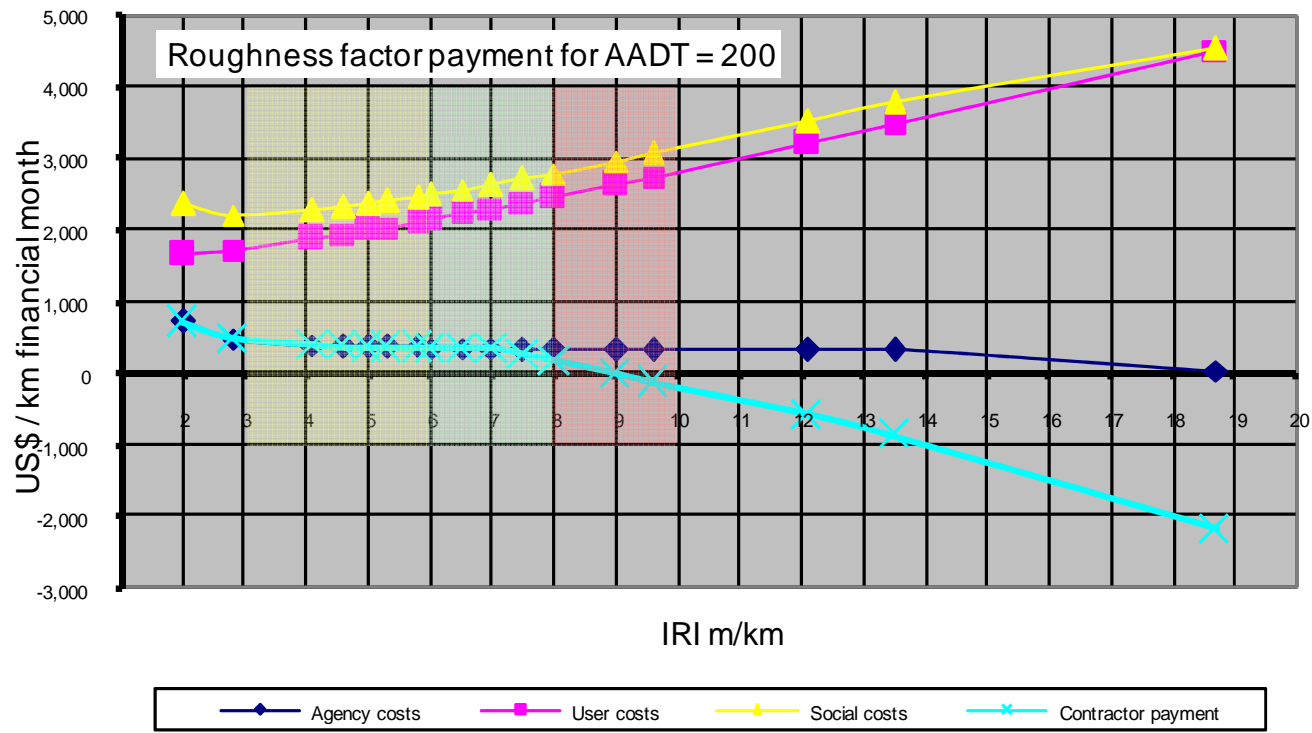
Payment proposal basis for unpaved road maintenance contracts based on IRI surface road control

$$P_m = f_r * f_a * f_t * f_{tp} * f_o * L$$

Factor	Adjustment due to:
f_r	Roughness (US\$/km)
f_a	Carriageway width
f_t	Finished appearance
f_{tp}	Heavy traffic and rainfall
f_o	Contractor financial offer

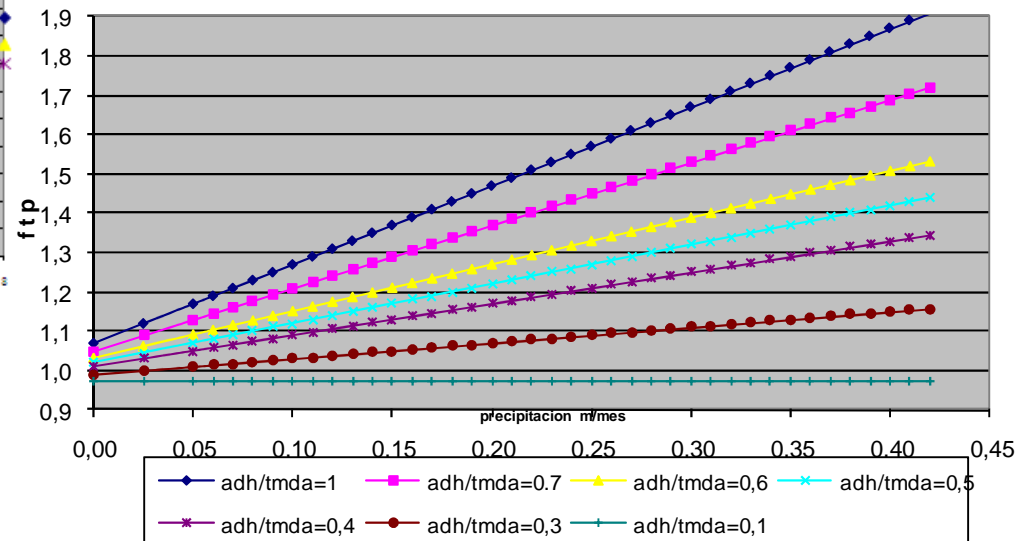
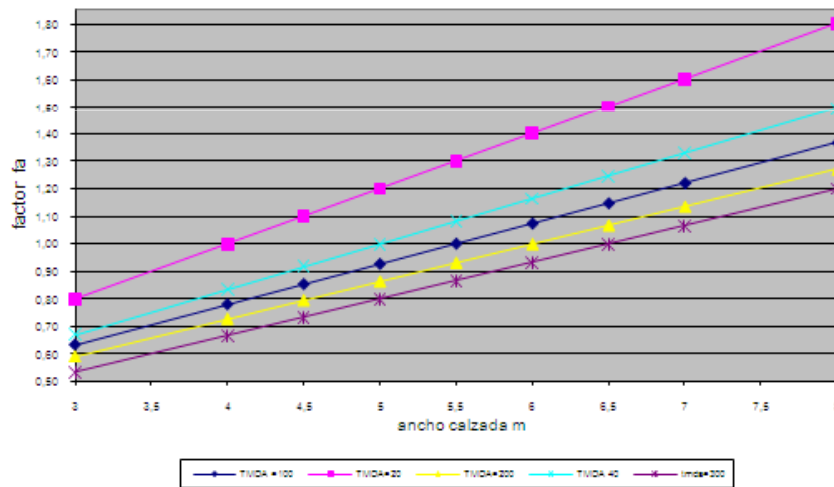
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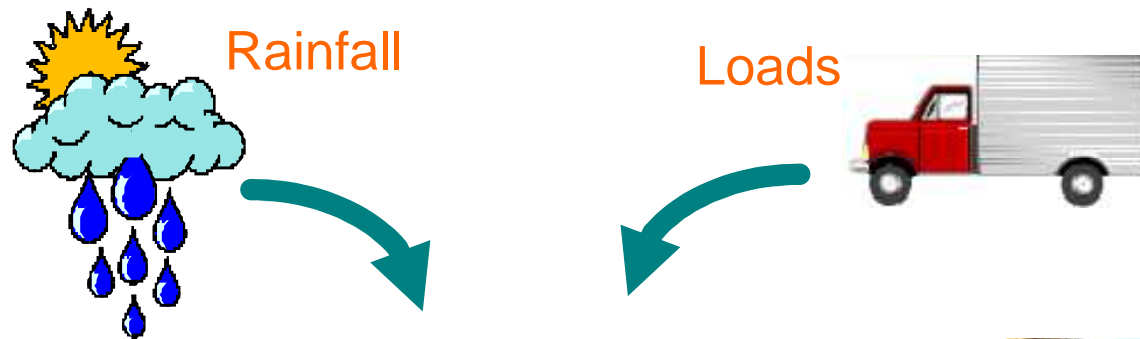
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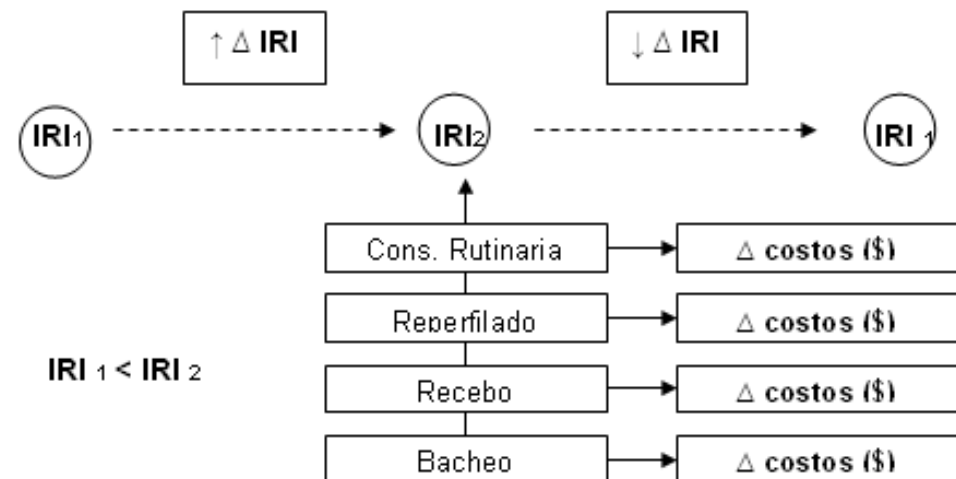
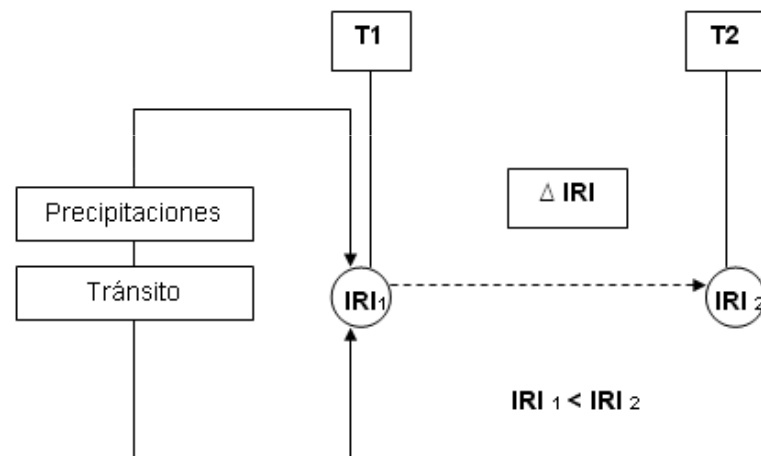
PROPOSAL DEVELOPMENT

The case of the heavy traffic-rainfall factor



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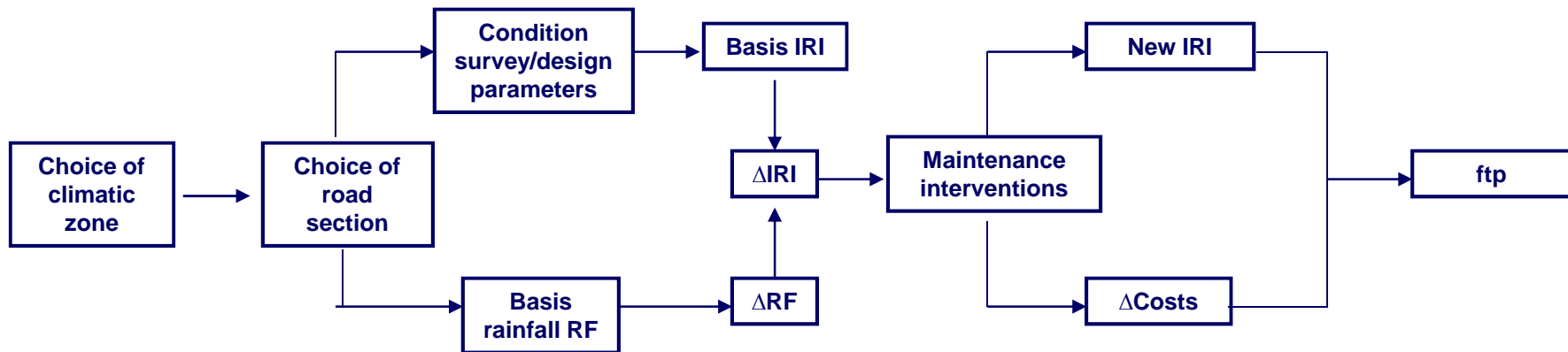
The case of the heavy traffic-rainfall factor



PROPOSAL DEVELOPMENT

The case of the heavy traffic-rainfall factor

Methodology to the construction of curves ΔIRI - ΔRF





Sharing the road



CONCLUSION

Although the present study is based on the Chilean unpaved road network, it could be extended and adapted to any network.

- Contracts length should not be short. On the contrary, it is recommended that they should last a least between 4 to 6 years.
- Some works, like the bridges infraestructure, could be contracted through the traditional modalities.
- A management infrastructure analysis is required.

God Bless Chile



God Bless Concepción

Thank you very much