

LISBOA 2010
MAY 25/28
16th World Meeting

DESIGN AND MAINTENANCE OF RURAL ROADS AND THEIR MANAGEMENT AND COST OF PRODUCTION

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Introduction

Location of the region

Identification of pathways

Registration of projects

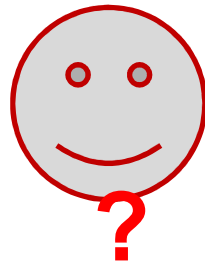
Management

Security

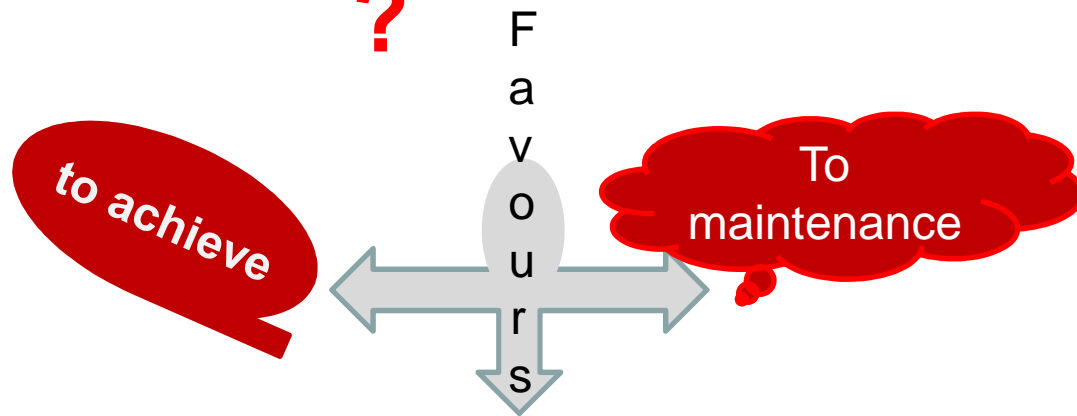
Constraints ?

Conclusion:

1) Introduction



How to justify decisions on registration of projects and their budgets?



to realize ?



Intuitively favours the maintenance rather than to achieve,

2) Location of the region

Saharidj The town is located below the southern mountain DJURDJURA on a plateau which reaches an altitude of 675, occupies an area of 10,859.00 hectares, It is composed of 4 secondary towns .

- **40% of the total area** of Municipality is belong to the National Park DJURDJURA.



▶ **Table 1: slopes topography**

slope 8 à 15%	583ha	5,37%
slope 15 à 20%	218,77 ha	2,10%
slope ≥20%	10057,00 ha	92,62%

The snow is present every year and completely covers the top of the mountains for a period of 3 to 6 months, from January to May about 45% of annual inputs.



Tracks	Long (km)	//Observations
CW9(0-14+439) Selloum, Aghbalou hameaux (Ighil Hamad et Thadert ladjid)	15,000	Covered 1983 Declivity of 8%(larger 6 m protective covering 0,5à1m)
CV1 (RN30- Beni Oualbane)	4,824	Covered 1983. Only 2200m band of 5m Before 1990, section rehabilitated 2004 covered totality 2007.
CV2 (RN30-Beni Hamad)	2,000	Covered in 1983 accotement with 1+1
CV3(RN 30-Belbara)	3,600	Covered in 1992,5m accotement 1+1.
CV4 (RN30-ILLITEN)	4,500	Covered in and startup 1986
CV5 (RN30-M'ZARIR)	3,000	Revêtue 1983
CV5(RN30-Hamlet Thala Rana)	4,000	No, Reverted

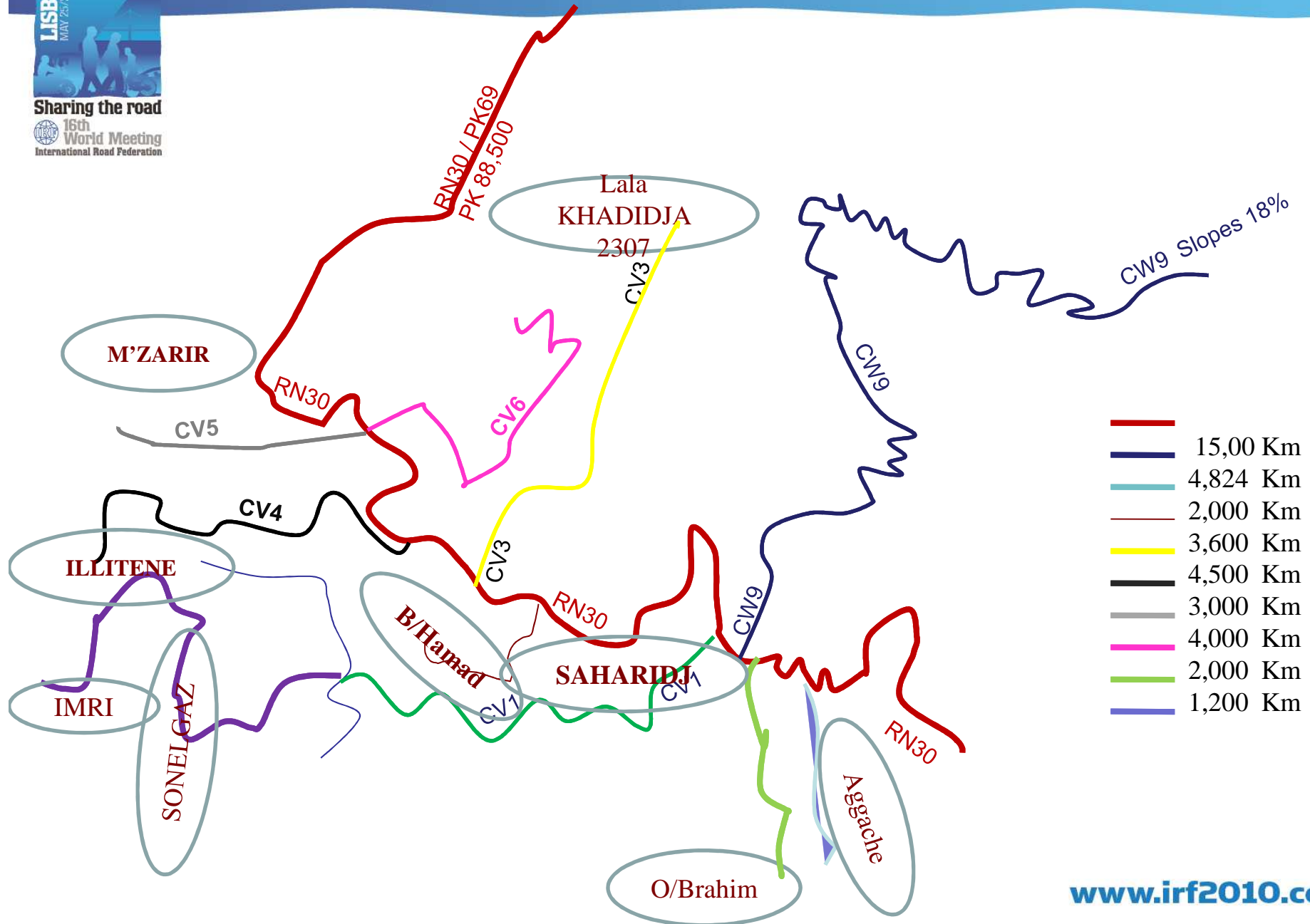


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CV5 (RN30-M'ZARIR)	3,000	Revêtue 1983
CV5(RN30-Hamlet Thala Rana)	4,000	No, Reveted
CC- RN30 Ouled Brahim	2,000	Coverd in 2001
RN30- Aggache	1,200	Covered with bitumen binder in 2005
Track of SONELGAZ	5,000	/
Beni oualbane Thimzgidha	1,500	Coverd in 2007
track Thaliwin	3,500	Confrontment in gabions presence of rivet
Track access source Noir Illitene	5,000	Opening of track 2005
RN-30 Thala Larbaa	1,222	2007 covered
track Beni Hamad Belbara	2,500	Track , no covered
track RN 30 -Makhchem	3,000	Track , no covered

3) Identification of pathways





Structures:

The nozzle works of the road classification Wilaya are characterized in diameter from 1000 to 1500 mm.

For municipal roads diameters used range from 600 to 1000mm.

Farm tracks and roads carry either within or **PDAR** engaged by the Algerian state, and a new experiment launched in 2008/2009 **PPDRI** in collaboration with European partner.

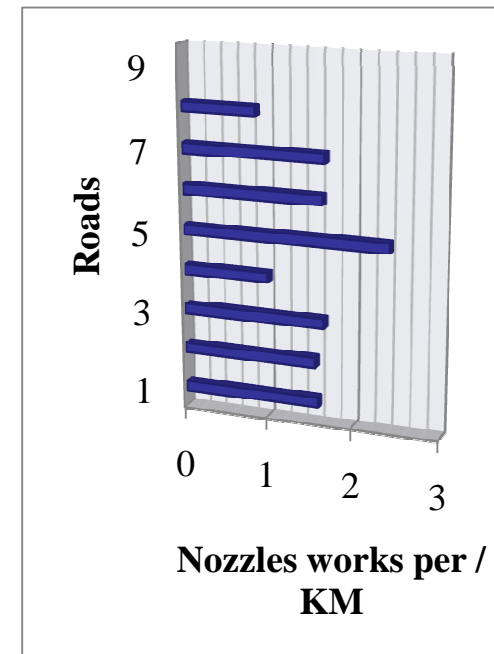


Figure : Average works nozzles per km



4) Registration of projects

a) The identification of project administrative perspective reflects the contexts in which part is classified :

- ✓ Policy?
- ✓ Rural development ?
- ✓ Social or cultural community?

in the majority of applications were intended to open up the population and prevent rural exodus.

b) The book conditions can contains , guidelines, regulations, decrees, but no **specific standards** that differ from the technical implementation and design of this structure.



5) Management

The Algerian state has made efforts in recent years to modernize rural roads ; a project of significant value linking two wilayat is underway

A percentage ranging between 70 a75% of the amount of each operation is for the following items:

- scarification of existing pavement,
- placement of the layer of TVO 0 / 60 to a depth of 15cm
- watering compacting 95% of the optimum Proctor modified, impregnated and coated bilayer and / or three-layer.

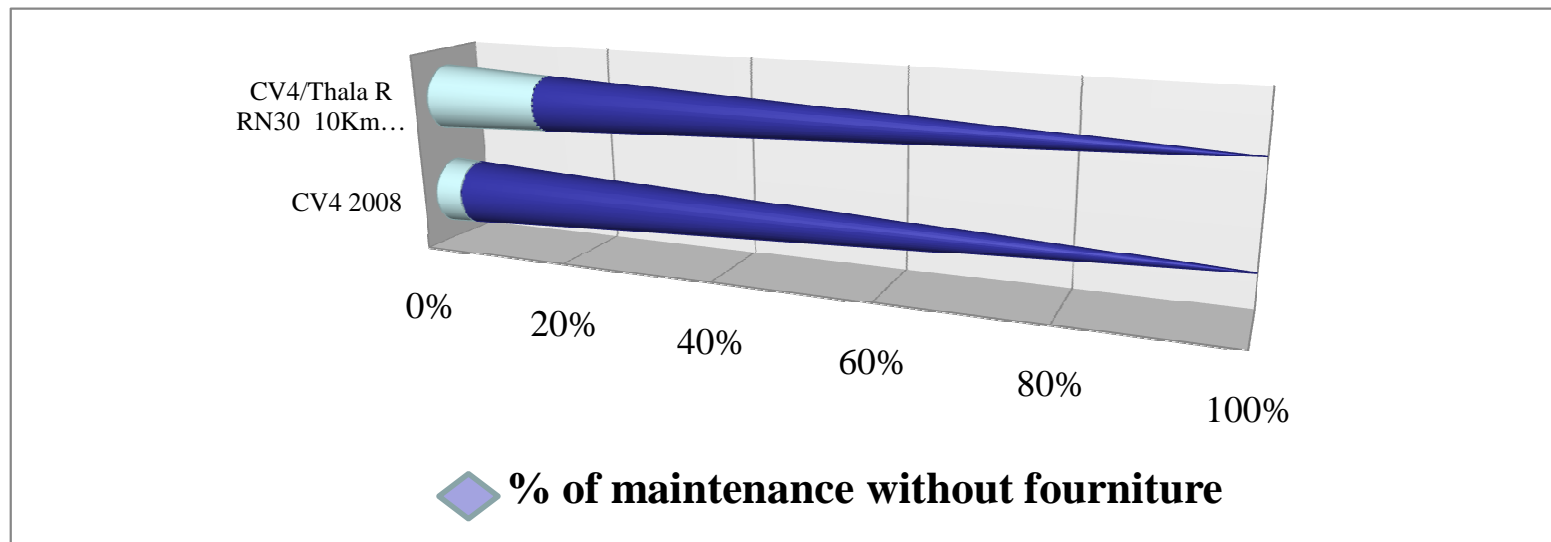
Design and management of the road by the said common figure in the first place by **an agreement with** a laboratory geotechnical work for the public followed.

- The quality of this monitoring depends on the **classification** of the road, major or minor and the **funding** of the operation. In general the control of a track is in :
 - a) Determination of particle size, cleanliness of aggregates, flattening coefficient, Los Engels and Micro-Deval.
 - b) Measurement of dosages of binders of different layers at different intervals "compactness, γ_d , W% in situ.

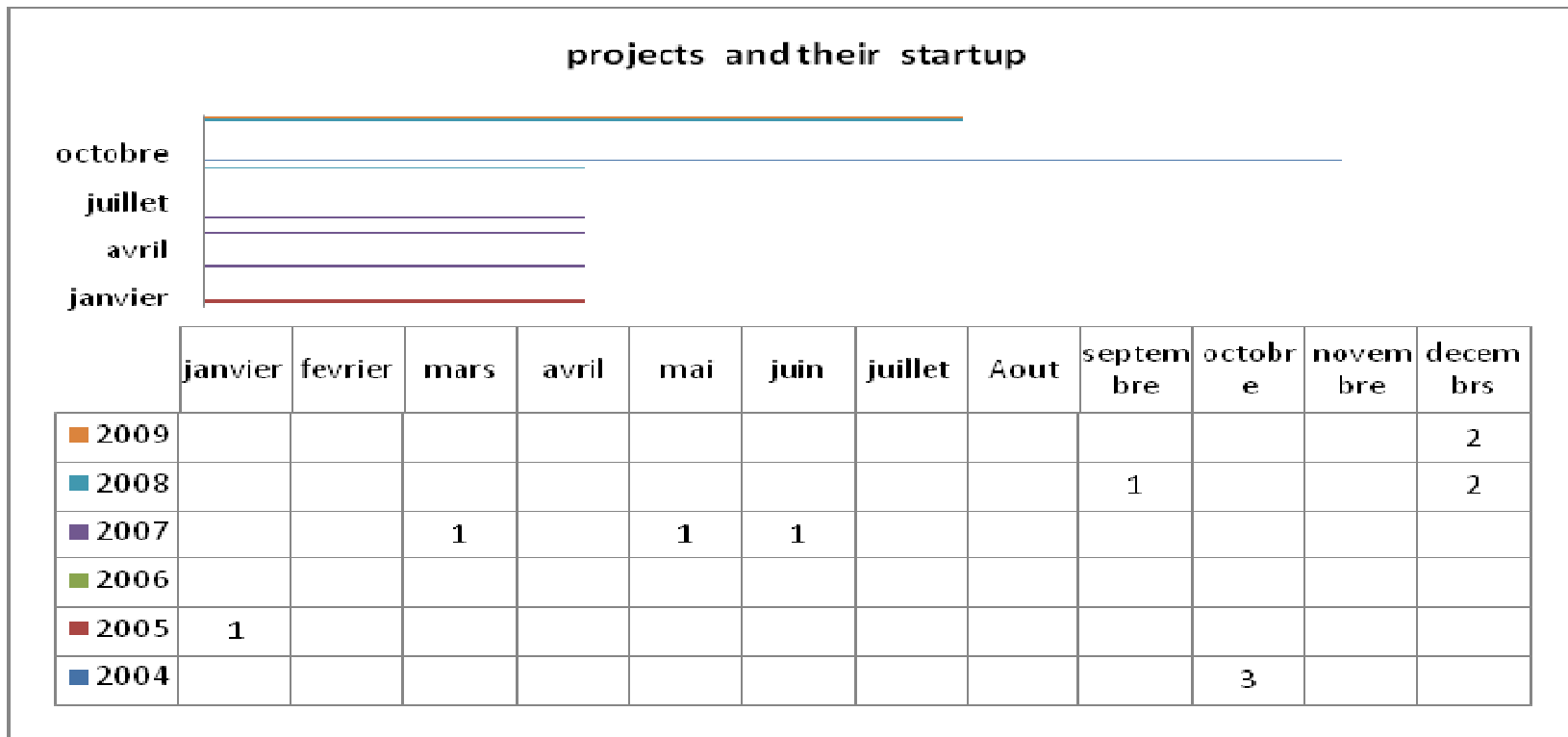
Maintenance:

These are projects managed financial sector by "the Wilaya. The political interest of inscription primary is employ more labour, decrease the rate diggings in of the rural population,, the second trail maintenance that requires after each winter season of work:

- pickups stones
- achievement of gabions
- cleaning, cleaning of ditches and structures nozzles
- Slope and alternate flows

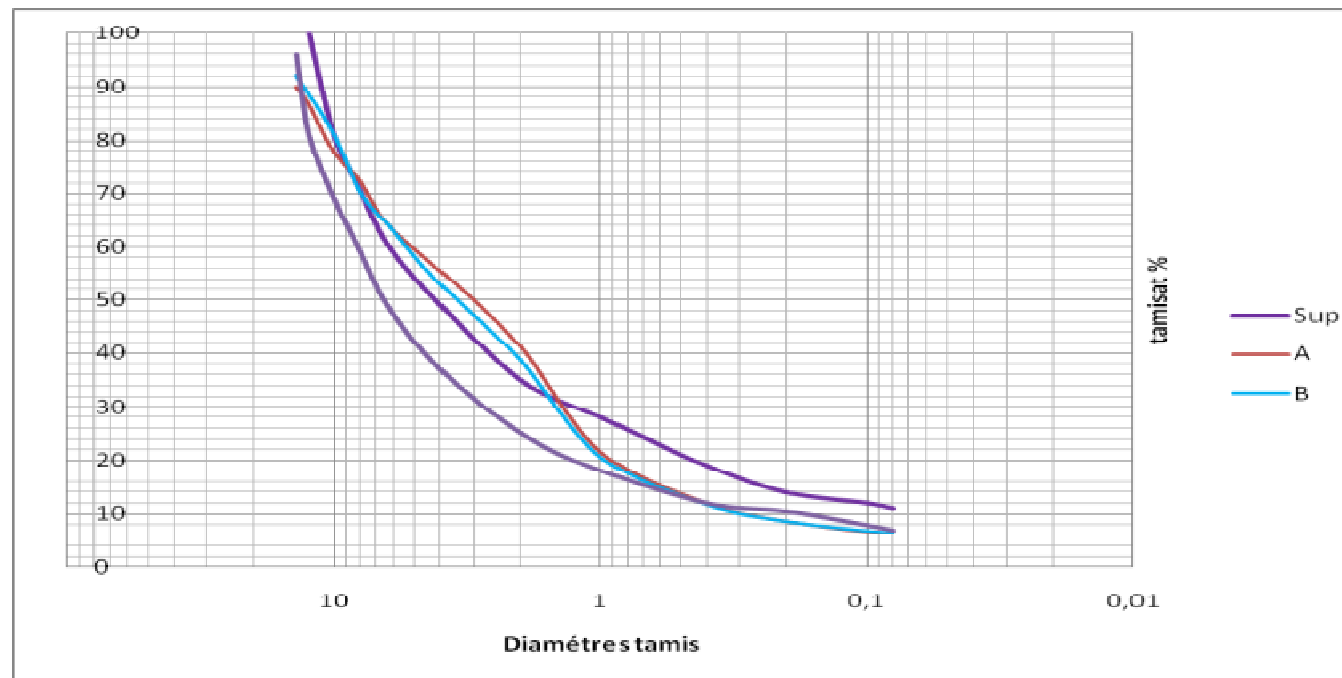


Planning: There is in this graph that in five years, seven projects planned off-season winter (October ,December), knowing that the rural mountainous region is subject to time impracticable, five to six months. Absence of road projects in 2006.



Source of materials

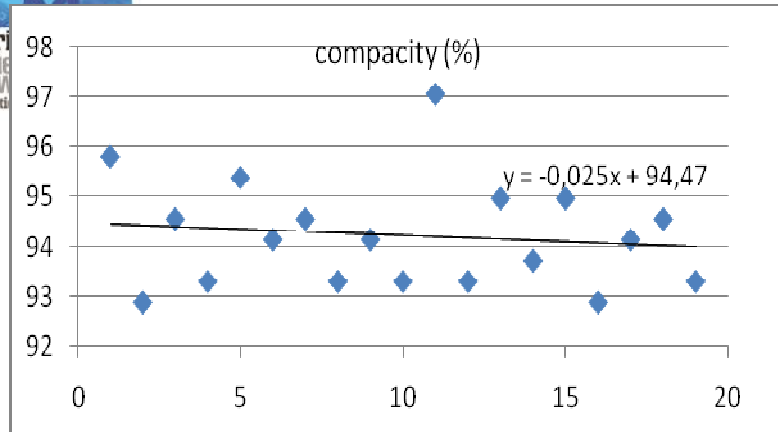
For their economic, Director takes advantage of local materials existing in the periphery, at least four career with the properties' size, hardness, forms "are acceptable for a track to low traffic



due to increased demand on aggregates from rivers



Figure : Example of particle mixtures used for the time BB 0/14 LCTP control laboratory work public.



Thickness of roadway (cm)

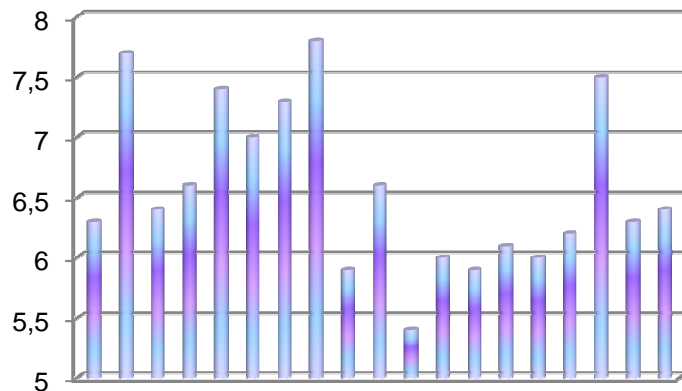


Figure : Example of compactness and thickness of pavement obtained from a road made

these figures show that the stringency of standards implementation is neglected, companies stocks the materials seems free causing pollution of aggregates, and lack of fines in the sand (precedent figure) due to implementation is underway the winter season.

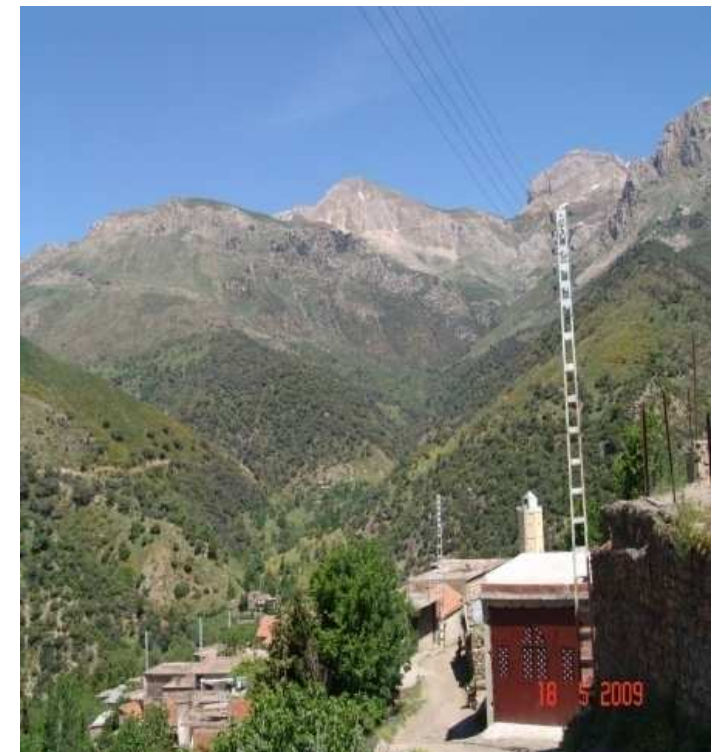
Classes granular marketed does not facilitate the correction of the mixture. Shortcomings of the binder tenor

- 6) Security

- The security is to take steps necessary to ensure the functionality of networks and access programs.

Road signing is very important but **only 10% insured**, knowing that in a mountainous region visibility is poor. For the illumination of the road, supported by the municipality only in urban areas.

Prevention measures must be put in place, eg installation of snowplows. Indeed, for damage or loss of a road can cause a response time longer in winter, or even loss of life and hinder sustainable development. Such damage is later adoption serious action in the implementation





7) Constraints ?????

- Lack of efficiencies in terms of subdivisions. and current maintenance.
- • **Connecting to other networks** by citizen's rough pavement construction, and filing of building materials and rubble at the roadside in a way illegal.
- • **Planning**, implementation of Networks, AEP, sanitation and other tough road construction.
- Difficulty of widening the roads ;for example **Tunnel M'zarir** , **rock slopes**, threatens its population located above the mountain.
Opposition of National Park Djurdjura, as justification for **environmental protection**.



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8) Conclusion:

- Before **beginning** the registration process for road projects. There must be **consensus** between government and citizens to ensure feasibility..
- The experiences encountered in the field during road design have shown that this type of infrastructure requires **serious study** of the base and **better planning** in the implementation and collaboration between institutions.
- The mountainous rural area needs a lot more **books culvert, concrete pit, and setting Slope, gabionage, shoring of embankments and retaining wall.**



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Thank you

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