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Niger moves to safer roads

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Setting the scene: road accidents are a major preoccupation on a world scale as well as on a regional and national level due to their surge and their socio-economic impact. Niger is no exception to this grim picture, but particular national factors come into play.

The country is large, at 1.3 million km², with a relatively low population density of 10 per/km². The vehicle fleet numbers only 76,100. But 58% of people are aged 25 or less, the most vulnerable age group for road accidents worldwide.

In 2007, 4,640 road accidents were recorded, causing 528 fatalities and 11,943 injuries. The figures are well above those of 2006, where 3,869 accidents caused 386 fatalities and 5,152 injuries. This situation is very serious, with a ratio of 48 killed per 10,000 vehicles and one accident every 28km/year.

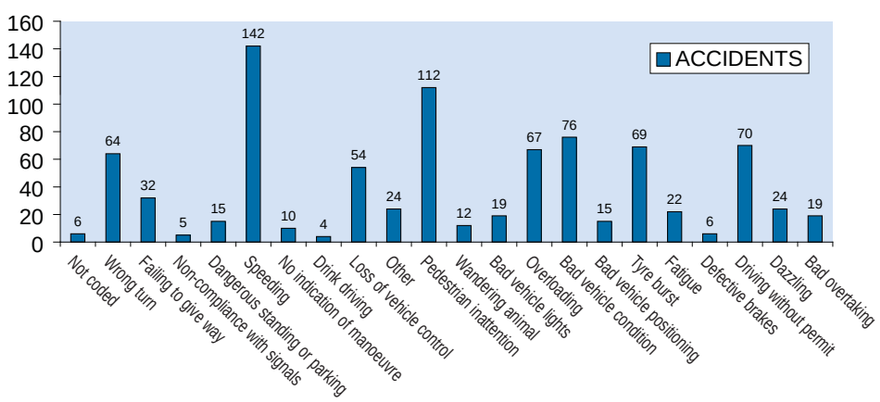
Casting the figures aside, road traffic accidents mean social impact and pain, some victims becoming handicapped for the rest of their lives. They also have economic consequences for the family and society to bear. A study conducted in Niger revealed an economic loss of XOF 2.697 billion in 1997 (0.3% of GDP compared with 0.2% in 1988).

Accidents do not just happen. They are associated with specific road offences. An in-depth analysis of a sample of 867 accidents indicated the following categories of offences:

The typography of road traffic accidents on the roads of Niger is as follows:

- 70% of accidents occur in an urban environment, 30% in rural areas, but 80% of fatalities occur in rural areas and 20% in urban environments.
- Vehicle types most involved in accidents are vans (25%) private cars (22%) and two-wheeled vehicles (18%).
- 83% of accidents involve male drivers
- Drivers between 30 and 39 years old represent 38% of the victims: drivers between 20 and 29 represent 29% of the victims.
- Of people killed in road traffic accidents, 35% are pedestrians, 23% drivers and 41% passengers.
- 52% of pedestrian victims are children aged 0 to 9 in Niamey, the capital.
- 41% of accidents in rural areas occur in open countryside, 34% while crossing a village, and 18% while crossing a regional capital.

Roads as a factor in road accidents in Niger: in 2008 Niger has a road network of 19,048km, of which 15,253km are interurban roads, 25% of which are paved. The ratio is of 13.32km/10,000 inhabitants. According to the road database, the paved road network is generally in better condition than other roads in countries of the sub-region, with almost 90% of roads in good or proper condition. Around 31% of non-paved roads require major rehabilitation works. Continuous maintenance and



“This unsafe condition of the road network is due to the priority being given to the opening up of landlocked regions over road safety”

regular maintenance are required to ensure the sustainability of the road network.

But certain road infrastructure characteristics in Niger are at the origin of road accidents:

- The roadside is either too narrow (generally 1m wide) or non-existent, especially at hazardous locations such as bends.
- Safety barriers are practically non-existent and, in places where they are provided, they are usually too short to be effective. Numerous road sections are provided with embankments, as well as elevated bends and sections on approaches to bridges, with parapets less than 1m from the edge of the road.
- Significant problems arise from the lack of homogeneous road traffic signals on roads through, and bypassing, villages.
- The condition of the carriageway on certain sections is poor, especially where carriageways narrow inside villages, deep potholes are formed in the carriageway.
- The local speed limit is not signed on the road network.
- The junction layout is either too complex in urban settings or under-equipped.
- Finally, there is a lack of visibility at junctions (example, because of trees), streets have no walkways, there is a lack of consistency in the use of signs and signals, and public lighting is insufficient.

This unsafe condition of the road network is due to the priority being given to the opening up of landlocked regions over road safety. Insufficient funding of road construction projects does not allow for adequate provision of road safety devices and equipment. Furthermore, road maintenance provisions are not among the priorities of lending institutions.

An action plan aims at improving the characteristics of road infrastructure safety through installation of road safety equipment to effectively reduce the risk of road accidents on the urban and interurban road network.

The focus will be on road safety audits of projects, the elimination of blackspots and the systematic inclusion of road signs and signals in all road rehabilitation and construction projects.

Elements for interurban road infrastructure includes repairs of road traffic signs and signals, installation of humps, construction of shoulders, installation of safety barriers, road maintenance, and provision of rest areas.

For urban road infrastructure several actions are planned in Niamey. These include setting up a traffic plan, improvement of visibility at junctions, repairs of priority signs, special signs and signals on approach to schools and public lighting.

Financing: in 1999 the Autonomous Fund for Road Finance and Maintenance (Caisse Autonome de Financement de l'Entretien Routier), or CAFER, was set up in Niger to address road maintenance issues. The financial resources of CAFER come from the tax levy on the consumption of petroleum; toll roads on national networks; revenue from calls for tender related to road programmes; compensation for damages to the national road network caused by users, duly recorded by experts and in court; resources from direct management or concessions of the national road network; revenue from the sale or use of written off or unused road equipment purchased by CAFER; revenue from services rendered, and contributions and donations

CAFER covers only one road safety aspect, namely continuous and regular maintenance of the national road network. ■

Maria Novikov, Project Manager, Safety, IRF-GPC, provided the above translation from the original French.

Accidents in Niger: frequent and serious

Partners for Roads win 2nd prize in 2007 IRF Road Safety Award

Safe road design: sharing the Dutch experience with new EU Member States

IRF 2nd place 2007 Road Safety Award (from left) Jean Lalo, Chairman of the IRF Working Group Safer Roads; Sibylle Rupprecht, Director General, IRF-GPC, and Herman Moning, Project Leader, Rijkswaterstaat, Netherlands

The Netherlands has been consistently within the world's top four road safety performers for the past decade. This remarkable record is largely a result of the sustainable safety vision launched in the 1990s, whereby a general proactive and integral approach to the elements of the road traffic system was adopted. Valuable experience was gained with the practical implementation of infrastructure measures, in particular.

The Directorate General Public Works and Water Management of the Netherlands (Rijkswaterstaat) initiated a programme in 2001 aimed at sharing the Dutch knowledge, expertise and experience in terms of road infrastructure with new EU Member States or candidate countries from Central and Eastern Europe (CEE). Safe Road Design is

one of the nine modules of the Partners for Roads programme-running since 2004 - and has also proved to be the most successful area of cooperation, where Dutch consulting companies share their expertise.

Safe Road Design aims at ensuring safer traffic conditions in CEE countries through disseminating best practices and developing standards for the design of safer roads. The value of designing and implementing infrastructure to reduce the probability and severity of road crashes has been proven and measurable results have been achieved. Particular attention is paid to the implementation of cost effective, low-budget measures to upgrade the existing road infrastructure, which yield immediate and significant road safety gains.

A manual on Sustainable Safe Road Design was designed in 2005 in cooperation with the World Bank and used as a basis for training and workshops in partner countries. The manual has proved a great success and has been translated into Chinese, Estonian and Romanian. Four-day training sessions are organised, on request, for representatives of national and regional road authorities, traffic police and local consulting firms. The interactive presentations and discussions are supplemented by systematic sessions of group exercises, with on-the-spot visits to demonstrate the theory and practice of safe road design, as well as technical field visits and seminars. To date, training has taken place in Bulgaria, Cyprus, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Turkey. Workshops on road safety audits have been held in Cyprus, Estonia, Hungary and Lithuania. Pilot projects focusing on specific areas such as linear villages or traffic calming measures are carried out at the request of partner countries.

Over 600 national road safety experts have been trained all over Europe, ensuring that more attention is paid to road safety measures at the road design stage, which in turn will mean safer roads in Europe as a whole. A train-the-trainer module has been elaborated, which led to the creation of a trainers' network with a dedicated website and meetings being organised twice a year to exchange knowledge among national experts.

The Dutch sustainable safety vision has been widely acknowledged as one of the most innovative and successful ways to improve road safety. With Safe Road Design other European countries see the benefits from sharing the expertise of the Netherlands. No doubt Safe Road Design could be brought to other parts of the world with similar success. IRF thanks the Rijkswaterstaat for their commitment to making the world's roads safer and congratulates them on winning the second prize at the IRF Road Safety Awards. That prize was received by Herman Moning, project leader, Directorate for Public Works and Water Management (Rijkswaterstaat), DVS Centre for Transport and Navigation, the Netherlands, on behalf of the Rijkswaterstaat. ■

Scott Wilson Group winner of the 2007 GRAA - Environmental Mitigation

A30 Bodmin to Indian Queens improvement project, UK

The corridor for this project is of high environmental sensitivity, reflected by the number of designations including Special Areas of Conservation (SACs), Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) and local wildlife sites. The route also crosses the headwaters of two highly sensitive rivers, the Fal and the Camel, which are designated for their ecological importance.

The project team of Alfred McAlpine (contractor) and Scott Wilson (scheme designer) were appointed through the Early Contractor Involvement (ECI) process. The team recognised quickly the special environmental value of the corridor. In dealing with a wide range of environmental issues such as archaeology, historic landscape, wildlife and associated habitats, groundwater and water quality, the team introduced dramatic and innovative solutions.

This is how the team saw the situation and how they dealt with it.

The existing A30 bisects Goss Moor, which is a SAC. The new route has been deliberately chosen to skirt the northern edge of the moor and to reconnect the two halves. This enabled connection and extension of the habitat supporting such species as the marsh fritillary butterfly. Wild flower planting, regeneration of moorland soils and collection of seed from the neighbouring moor have further enhanced the habitat.

The route had the potential to disrupt the groundwater flows of two important rivers. However, measures have been taken to ensure that all ground water movements are maintained and not diverted or accelerated. Particular methods used were swales and distribution ditch systems.

In the development of the environmental mitigation the project team were given an award by Cornwall

County Council for 'partnership'.

Particular care has been taken to reduce the current high rate of road kill of otters, by the provisions of tunnels under the new road and extensive fencing. An innovative fencing design delivers required performance while minimising visual intrusion.

Extensive use has been made of Cornish hedges as field boundaries to retain the existing landscape feature. These have also been used in an appropriate engineering form for acoustic and anti-glare barriers.

The scheme accommodated the aspirations of the County and Natural England for opening up the moor to the public by providing new equestrian routes.

"These proposals were developed by our environmental coordinator's team, an Environmental Statement published and taken successfully through statutory procedures including a public inquiry," pointed out the Scott Wilson team.

"Our site-based environmental manager has provided 'best practice' advice during construction, for example for preventing the egress of muddy water into sensitive watercourses."

Prior to the main works, archaeological investigation was carried out on a 10m wide strip throughout the site. This allowed early identification of locations requiring fuller evaluation. Despite uncovering some significant finds the progress of the construction was unimpeded.

Aggregates for drainage, pavement and concrete were obtained as secondary products from the local china clay industry.