

SHORT, NON-REFEREED PAPER

THE COLLABORATIVE EFFORT BETWEEN GOVERNMENT AND THE PRIVATE SECTOR TO REDUCE HEAVY VEHICLE OVERLOADING IN THE SOUTH AFRICAN SUGAR INDUSTRY: 2006 TO 2017

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Abstract

Overloading heavy vehicles is a road safety and cost concern for both heavy vehicle owners and end users of transported products. Overloading causes premature road deterioration and increased vehicle maintenance, and these contribute significantly to South Africa's poor road safety record. The South African National Department of Transport incorporated the campaign against overloading on its roads as a safety strategy. A self-regulating initiative called the Road Transport Management System (RTMS) was partially introduced in 2008 to address overloading in the South African sugar industry and be in line with the National Department of Transport's campaign for a road safety strategy. This paper discusses the successful collaboration of various stakeholders in reducing vehicle overloads in the South African sugar industry from 2007 to 2016. The industry stakeholders involved in the RTMS committee include the KwaZulu-Natal Department of Transport, Crickmay and Associates, the South African Cane Growers' Association, sugarcane millers, growers and haulier representatives. The overloading of heavy vehicles in the sugar industry on South African roads has reduced significantly since the RTMS self-regulating initiative was introduced to the sugar industry. As a result of the RTMS initiative, the incidences of overloaded vehicle deliveries from farms to sugar mills in South Africa decreased from 25% in 2007 to 3.5% in 2016. In addition, the haulage productivity of the vehicles has increased due to the correct average payloads.

Keywords: sugarcane, overloads, collaboration, decision support system, haulage, productivity

Introduction

Overloading heavy vehicles is a road safety and cost concern to both heavy vehicle owners and end users of delivered products. The effects of overloading are a major problem on South African roads, and results in increased damage to roads, higher operating costs and more road accidents.

In 2003, the Department of Transport (DOT) developed a national overload control strategy (NOCS) and an essential component in this strategy was the control of consignors and consignees of goods transported on public roads. Moreover, the NOCS from government supported and encouraged many industries, including the sugar industry, to develop strategies that deal with overloaded heavy vehicles. The consignor and consignee legislation was implemented in January 2015. The legislation formed part of the National Road Traffic Act 93 of 1996. Moreover, the aim of the legislation is to stop overloaded vehicles at the source and control goods transported on public roads. All the consignors and consignees must ensure

that they comply with the requirements, since there are costs involved in non-compliance with the legislation. According to the consignor and consignee regulation there are different provisions for different offences; however, companies that overload could be fined R120 000 or six years in prison or both. Transport operators are not allowed to dispatch any overloaded sugarcane vehicles and the sugar millers are not allowed to receive any overloaded heavy vehicles into their yard.

This paper aims to illustrate the collaboration between government and various stakeholders in the sugar industry on how they reduced heavy vehicle overloads in the South African sugar industry from 2007 to 2016.

Methodology

A component of the self-regulating initiative called the Road Transport Management System (RTMS) was introduced in 2007 to address overloading in the South African sugar industry and be in line with the National Department of Transport's campaign for a road safety strategy (Norden and Pienaar, 2007). This load control strategy is a sugar industry led, government supported, self-regulation scheme that encourages road transport operators to implement a set of standards that demonstrates compliance with the Road Traffic Regulations. The industry stakeholders involved in the Sugar RTMS steering committee include the KwaZulu-Natal Department of Transport (KZNDOT), Crickmay and Associates, SACGA, sugarcane milling representatives, growers' representatives and haulier representatives. Crickmay and Associates is a service provider to the sugar RTMS steering committee by collecting, scrubbing, assorting and analysing data, as well as developing other data sets such as Permissible Maximum Carrying Capacity of individual trucks using a patented method. Also, Crickmay fulfils the role of a credible independent third party information provider to the committee. There are miller, grower and haulier representatives on the committee to ensure that there is effective communication to and from the sugar RTMS steering committee to the regional organisational structures such as Mill Group Boards and other grower structures and vice versa.

The RTMS aims to improve the business of road transport operators by reducing overloading, preserving infrastructure, reducing traffic violations, reducing high levels of driver fatigue, improving efficiency, promoting skills development and driver health care programmes. Moreover, the sugar RTMS steering committee project was created as a platform to bring both government and sugar industry stakeholders who are affected by the road traffic regulations. This was done in preparation for the Consignor and Consignee legislation which was to bring a type of a penalty system for all overloaded vehicles. The sugar RTMS steering committee has put forth strategies that included the introduction of fines or penalties on all overloaded vehicles above certain levels. According to Aproskie and Goda (2010), imposing a penalty or a fine can affect a business's investment decision and possibly force the business to exit the market. Initially, the penalty system of overloaded sugarcane vehicles arriving at the sugar mill was the strategy most local sugarcane farming associations promoted and implemented. These penalties were imposed on all growers or hauliers delivering sugarcane who violated the rule of overloading. Moreover, the penalties were used as a warning to discourage any future violations of overloading by fellow growers that might otherwise consider engaging in similar conduct. The magnitude of the penalties was specific to the milling region.

The extent of overloading decreased due to the introduction of penalties; however, overloading did not cease completely. Prior to 2015, each milling region introduced its own overload strategy with its own penalty system. Initially all overloaded sugarcane vehicles were rejected and not penalised. This strategy resulted in the overloads accepted by the mill dropping dramatically. The sugar industry benefited greatly from having stakeholders, such as DOT, being part of the steering committee. The DOT was patient and willing to work with the industry overloads at a boardroom level through discussions and strategising instead of stationing law

enforcement at all sugar mills. By 2015, all milling regions introduced a common rejection strategy set at a 2% overload. However, through the Mill Group Board, each milling region reserved the right to have a different rejection percentage and method of dealing with overloaded payloads. The penalties for overloading was set around R120 000 or six years' imprisonment or both (Consignor and Consignee Legislation, 2015). This was enough to put pressure on all the stakeholders who were involved in loading and transporting sugarcane. Hence, the sugar milling regions in South Africa were persuaded to adopt the legislation and were advised by the sugar RTMS steering committee to implement the mill rejection strategies.

Results and Discussion

There has been a significant decrease in the frequency of dispatched overloaded vehicles due to the sugar RTMS project. The overloads received into mills have reduced from 32.14% in 2006 to 0.002% in 2017 (Figure 1), while the overloads dispatched from farms have also decreased from 32.14% in 2006, to 3.5% in 2016.

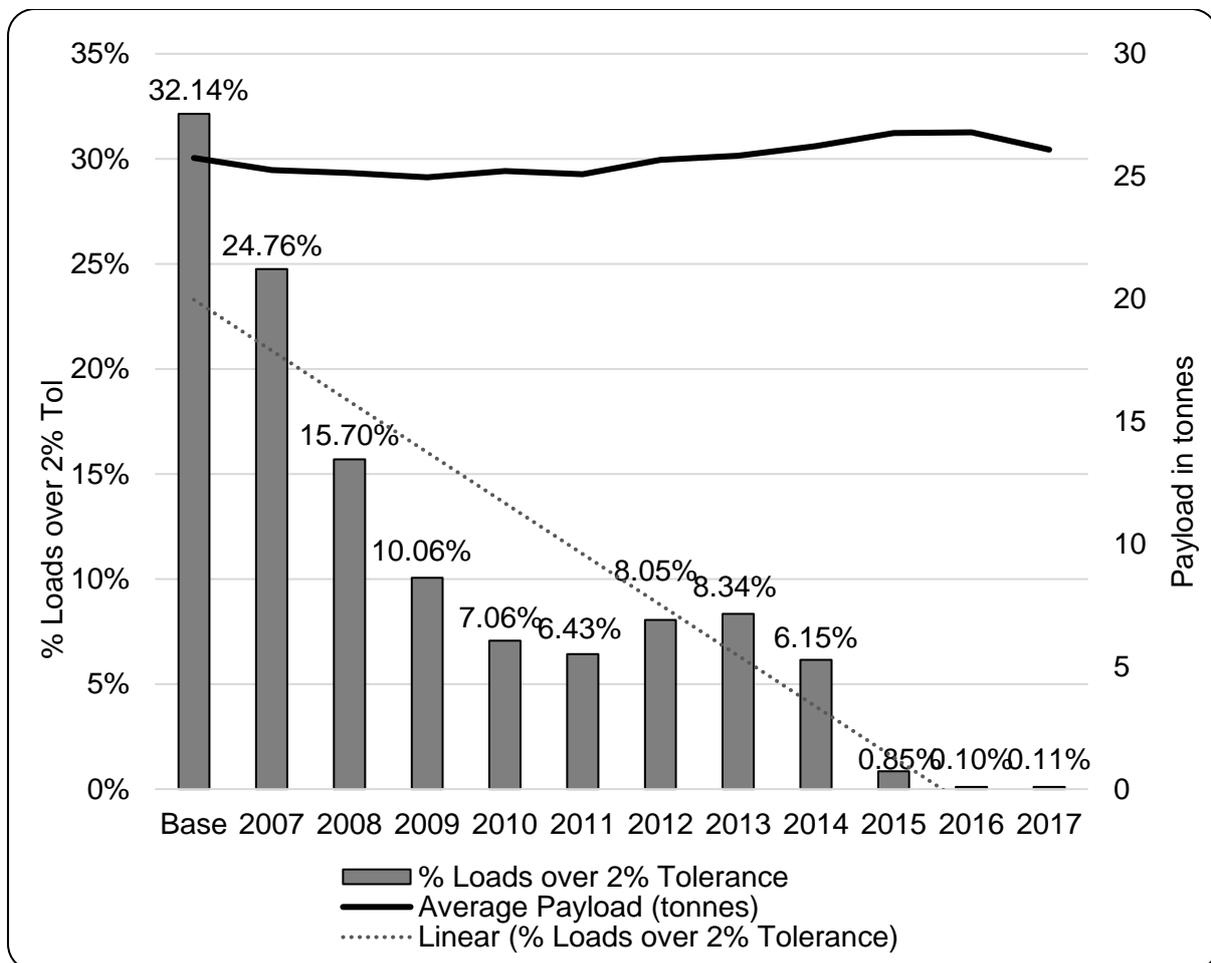


Figure 1. Project overload reduction and impact on payloads.

Figure 1 illustrates that the productivity of the vehicles on average increased steadily from 2012 onwards due to an increase in average payloads. Both an increase in loading accuracy and higher average payload vehicles being adopted resulted in a payload increase to 26.80 tonnes in 2016 from 25.75 tonnes pre-project.

Moreover, because of the sugar RTMS project, in 2016 the sugar industry had approximately 8 263 fewer trips to the mill in 2017 and an estimated saving of R10.7 Million (21 471 trips worth an estimated R27.2 Million in 2016) shown in Figure 2. Cumulatively this benefit at the

end of the 2017 season totalled R19,2 million to the industry and growers. This in addition to the benefit of almost eradicating overloading. However, the average payload in 2017 dropped slightly due to an increase in vehicle underloading in certain mill areas and the sugar mills with smaller average payloads had delivered a relatively larger proportion of the crop, thereby pulling the industry average payload down. This is a focus area for the upcoming season.

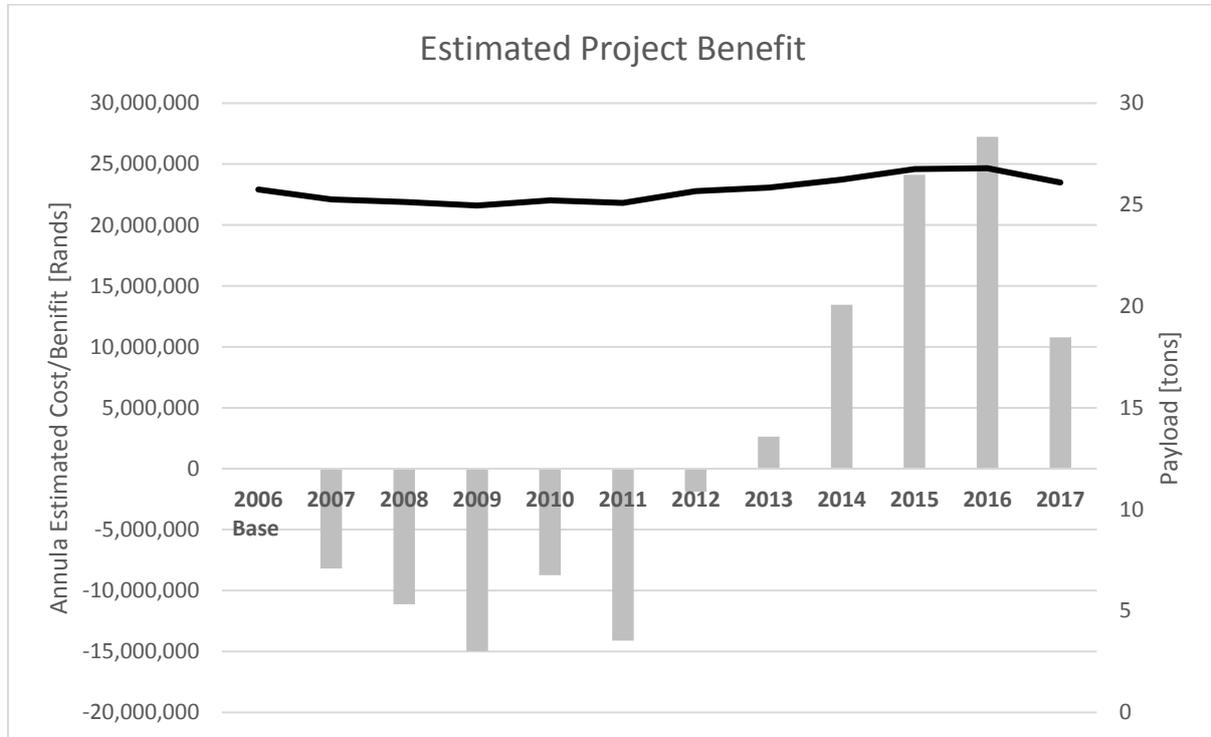


Figure 2. Estimated project net benefit.

The RTMS programme has been very successful since its introduction in the sugar industry in 2007. Transport operating companies that have become RTMS accredited have benefited by implementing this decision support system. For example, Unitrans Sugar Pty Ltd, a company based in the Amatikulu milling region, reported that the occurrence of accidents reduced by 90% and their costs relating to accidents reduced by 79% since introducing RTMS. Furthermore, Mondi Business Paper Ltd have reported that it is possible to improve fuel economy per ton by 13.3% by adopting and embracing RTMS.

Conclusion

The sugar RTMS project has demonstrated outstanding results since its implementation and it continues to support the Department of Transport’s National Overload Control Strategy (NOCS). Moreover, the RTMS became an effective system that is industry led, government supported and is a self-regulation scheme. It formed a collaboration between the government, sugar industry stakeholders and the private sector in reducing overloads and achieving consistently good results. However, the biggest success going forward would be the maintenance of the current success for years to come.

The RTMS project has successfully reduced sugarcane overloaded vehicles on South African roads. About 3.5% of all dispatched sugarcane vehicles are overloaded and this presents an opportunity for further improvement in the sugar industry. However, any industry or hauling business can adopt and duplicate the RTMS system to improve their transport cost and overall transport efficiency.

Institutions that have an interest in becoming RTMS accredited must apply to the National RTMS and have their system evaluated. Lastly, there are four pillars of the RTMS, namely loading control, safety and compliance, driver wellness, and training and development. Overloading is one aspect of compliance. However, there is a need for future studies that look at other issues not discussed in this paper, such as vehicle underloads, driver wellness and training and development. The aforesaid will have to be addressed notably when the Administrative Adjudication of Road Traffic Offences Act (AARTO) comes into law in South Africa.

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