Cruz Roja
Costarricense

Developing Sustainable Fleet Management

Experiences from the Costa Rican Red Cross

STRATEGY 2030
LOCAL ACTION, GLOBAL REACH

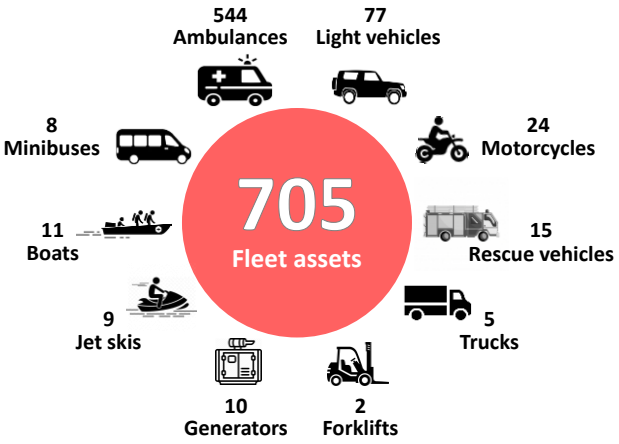
Photo: Costa Rican Red Cross

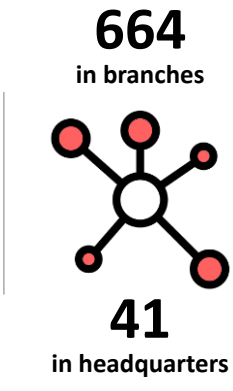
Context and scope

Costa Rica is a Central American country with variable terrain from hills, valleys, rainforests, mountains, volcanoes, wetlands, and plains. It is the only country to meet all the five UNDP criteria measuring environmental sustainability and plans to eliminate fossil fuels by 2050[2].

The country has a population of around 5 million inhabitants and a land area of 51,060 square kilometres. Over 2 million people live in the capital San José and the surrounding metropolitan area.

The Costa Rican Red Cross (Costa Rican RC) focuses on disaster preparedness, community health and environmental protection. It is the main ambulance service provider in the country, and it is offered free-of-charge to the population. It is funded 60% by own resources through several fund-raising activities and programs, and 40% by government contributions. The organisation comprises of 111 branches, over 5,000 volunteers and 1,300 staff across the country. The fleet unit is made of 5 dedicated staff members, 621 drivers and 705 fleet assets including more than 540 ambulances and over 150 operational support units such as cars, motorcycles, minibuses, rescue vehicles, boats, trucks, forklifts and generators.





KEY MILESTONES

2012
- First phase of the Vehicle Tracking Systems initiative

2017
- Governing board decision to implement a fleet development project
- Implementation of a Vehicle Tracking System and GPS devices
- Fleet standardization and increase of vehicle safety/quality standards

2018
- New fleet management manual
- Key Performance Indicator implementation

2019
- Vehicle servicing and repair only in authorised workshops
- Strengthening driver skills: Start of the off-road driving course

2020
- Strengthening collaboration with authorised workshops
- Strengthening driver skills: Start of the administrative training

2021
- Automated on-board driver recognition
- Implementation of telemetry systems[1]

[1] Telemetry is a wireless technology for sending and receiving data to remotely monitor the states of vehicles in real time. Integrated with a Fleet Management IT system, it helps fleet managers to get a strategic view on what is happening with both vehicles and drivers.
[2] https://cambioclimatico.go.cr/wp-content/uploads/2020/01/NationalDecarbonizationPlan.pdf

In 2017, the organization embarked on a development process to improve planning and to redefine its strategic objectives. The Costa Rican RC Strategic Plan 2017-2020[3] has nine strategic enablers, including fleet management, which form the "building blocks that are essential for success". An objective was set to become fleet carbon neutral (net zero carbon vehicle footprint).

This document summarises the key findings and learnings from the fleet management change process started in 2017. It was the result of a clear commitment to change the traditional management model, the provision of succession plans engaging technical staff with renewed knowledge and skills and addressing the recurring problems of operational efficiency reported by several stakeholders.

Main aspects of the change process

The main objective was to optimise the use of all fleet assets across the country using Key Performance Indicators (KPI) for better decision-making.

Accurate and comprehensive data collection was a pre-requisite to define a baseline; select KPIs improvement targets; monitor progress and take evidence-based decisions. The implementation of a new Vehicle Tracking System and hiring a new fleet manager were necessary steps. This enabled the following improvement activities and changes:

- Every fleet asset is tracked and controlled across its whole lifecycle: requirements definition, acquisition, operation, maintenance and disposal.
- Data analysis from the vehicle tracking/GPS IT system enabled to monitor critical indicators and take required actions. For example, identifying situations where vehicles surpassed 100 km/h led to an internal awareness campaign to reduce these occurrences.
- Ability to calculate the CO_2 emissions of the entire fleet for further reduction strategies to reach the carbon neutral goal.

Photo: Costa Rican Red Cross

[3] Available only in Spanish: http://www.cruzroja.or.cr/?Descarga=plan-estratgico-desarrollo

- Technical analysis of the accident rate based on data models (big data).
- A nation-wide database of all authorised drivers with a personal record.
- Identification and reduction of vehicle idle time to achieve a big improvement both in fuel and CO_2 emission savings through driver behaviour changes and working with partners to limit waiting times. As an example, meetings were organised with hospital managers to instruct emergency room staff to minimise the amount of time ambulances had to wait for the stretchers to be released and returned.

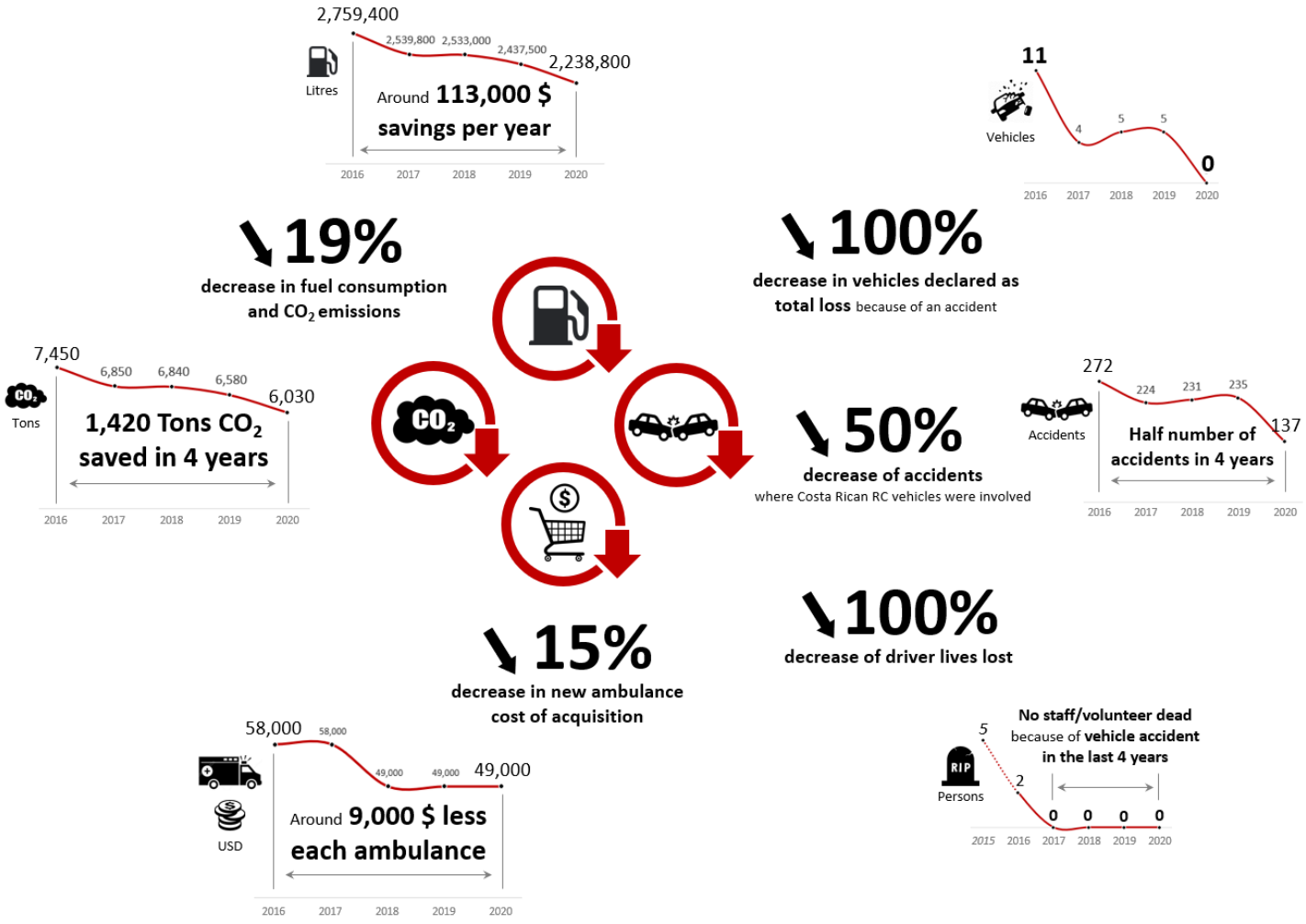
Other changes adopted during the last years include:

- Implementation of a new fleet management manual that includes best practices from the private sector.
- Economies of scale achieved through:
  1. Standardization of the fleet via a catalogue of pre-defined vehicle models. Using a 'Total Cost of Ownership (TCO) mindset' not focused on the lowest initial purchase price option, but instead selecting longer-lasting vehicles with less frequent repair needs to save on the overall maintenance costs.
  2. Agreements established with official service centres of each car brand, which could offer warranty on the service and spare parts as well as provide service/repair data regularly in electronic format creating a predictive maintenance program with alerts for maintenance scheduling.
- Purchasing from IFRC's Fleet Unit based in Dubai provides lower prices paid for the vehicles, generating a very important cost saving and may reduce delivery time. Furthermore, additional technical features not available in vehicles from the local market were gained (e.g. ABS brakes, double fuel tank, snorkel, stocks of original Toyota spare parts and 4x4 converted ambulances with an advanced design).

  Under its green fleet strategy, the Costa Rican RC is requesting the IFRC to add lower emission engine types in the catalogue of vehicles to allow adoption of more eco-friendly vehicles.
- The use of bank cards when refuelling in gas stations streamlined the administrative payment process.

The practical benefits achieved in the last 4 years include:

- Decrease in fuel consumption and CO_2 emission
- Decrease in the total cost of ownership: acquisition, operating and disposal expenditure
- Decrease in the number and severity of accidents



The savings in fuel consumption covered the investment in the fleet management software, the Vehicle Tracking System and the data integration with authorised workshops.

What were the main success factors?

- Senior leadership support for the change management process.
- Fleet management included as one of the nine strategic enablers to better support core services and activities.
- The aspiration to become carbon-neutral was a driving force in decision making and changing old habits.
- Comprehensive monitoring and control allowing informed decision making and facilitated the impact measurement of the proposed changes.
- Reducing the digital divide through the use of electronic data capture and processing systems.
- Cross-department collaboration to ensure improvements would not only achieve fleet efficiencies but also would allow programme objectives to be met.

Photo: Costa Rican Red Cross

What were the main challenges?

- Adoption of the 'total cost of ownership' mindset requires people to rethink how value for money is measured.
- Initial lack of data available to provide a proper picture of the situation. It took one year to start measuring fleet indicators until a baseline could be properly defined.
- It takes time to deliver a project like this, when developing a roadmap, estimating the investment required and planning a mix of quick-fixes and mid-term projects.
- Bringing an expert from the private sector requires a proper onboarding process and some time for that person to understand the mandate and decision-making process of a volunteer-based organisation like a Red Cross or Red Crescent National Society, steered by an elected governing board. That was the case of the new fleet manager, who needed some time to understand how to appropriately adopt and adapt private-sector best practices.

Reflecting on our learning

The improvement of the fleet control has generated positive results in terms of reducing vehicle accidents, injuries on vehicle occupants and pedestrians, fuel costs and CO_2 emissions. Implementing a preventive maintenance program with authorised workshops has contributed to reduced repair costs, as well as a reduction of time when vehicles are not operational because of break-down or maintenance -something especially critical for the ambulance service-. All those factors together with the standardization of vehicle models and procedures across the different offices have extended the lifecycle of the vehicles.

Photo: Costa Rican Red Cross

Some of the key lessons learned by the Costa Rican RC from this initiative are:

- Fleet development needs to play a bigger role in the organization's strategic planning, given that the Costa Rican RC is the main ambulance service provider in country and that is one of the core services the institution offers.
- It is critical having the support of senior leadership from the beginning of a capacity strengthening initiative to provide an environment for such change to take place. The fact that Costa Rica plans to become a carbon-neutral country in the near future, contributed to setting the ambition of the Red Cross becoming fleet carbon neutral (net zero carbon footprint of its vehicles).
- Implementing a Vehicle Tracking System and integrating it with a fleet management software enables better fleet control, provides real time, electronic data (e.g. vehicle location and speed) for better informed decision making which in turn may lead to higher efficiency.
- The reduction of fuel consumption paid off the investment in the new fleet management IT system. Depending on the fleet size, use and type it may be possible to get a return on investment in 2-3 years.

- Recruiting a fleet manager with private sector experience can bring new ideas and best practices but requires a proper onboarding process and initial time to learn and understand the way a humanitarian organization works before any development can start taking place and bringing tangible results.

- Standardization of vehicles can generate significant cost savings as a result of improved maintenance efficiency and benefiting from economies of scale.

- Reaching out and involving also outside stakeholders in developing the fleet management of the Costa Rican RC was an important part of the process. For instance, the IFRC provided external support in conducting a vehicle accident investigation and compiling some recommended actions.

- Analysing the data from the last 4 years, the organisation has found a correlation between speed reduction, reduction in accidents and reduction in fuel consumption (and reduction in CO_2 emissions). With a Vehicle Tracking System in place, drivers were aware that their speed was being monitored which was translated in a significant reduction in over-speeding and contributed to safer driving habits (from January 2019 to October 2020 the times that 100km/h speed was exceeded was reduced by 21%).

- One department can inspire the whole institution to make improvements: the fleet data collection, data analysis, KPIs and dashboard system have been used as a model by other departments in the National Society that are trying to optimise service performance levels.

Before embarking in fleet development initiatives, it is worth considering that a National Society reflects on the following

- Being aware about the need to improve fleet management as a key enabler for better service delivery.

- The business case should establish clear goals around safety, cost-savings, and environmental sustainability together with estimating the funding required and the benefits expected. In the case of fleet management, it can render a return on investment by savings in some important type of expenditures such as asset purchase, maintenance, fuel and disposal.

- Focus on the change management aspects required for successful implementation. There is a natural resistance to change in organisations by individuals trying to keep their methods and customs constant.

- Be patient. Apart from few quick fixes, enhancing and optimizing fleet management capacity takes some time. Tangible benefits might only be reached from the second year, especially if no previous KPI and data collection system is in place.

- An integral approach for fleet development should be used in such a capacity strengthening initiative. Implementing IT systems can provide data and identify action, but additionally dedicated and skilled staff, procedures and behaviours are also required to achieve the overall desired impact.

- Buy-in, support and engagement from the National Society senior management is fundamental.

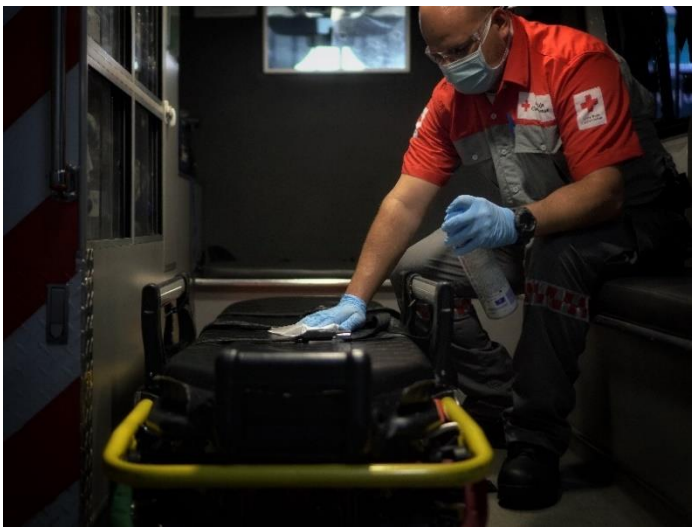


Photo: Costa Rican Red Cross

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