

**Early Spark.** At an age when most teenagers are still figuring out their dreams, 14-year-old Shafick Ssemusu is already helping build them—quite literally—inside a Nansana garage where Uganda's ambitious Formula Seven project is turning scrap metal, youthful curiosity and engineering skill into roaring race cars.



# Formula Seven: The Ugandan version of Formula One cars

BY ABDUL-NASSER SSEMUGABI

**A**t just 14, Shafick Ssemusu is already sure of becoming a mechanical engineer. Forget your childhood dreams—which are just dreams—the senior two student at Namungoona High School is already engineering no wonder, one of the Formula Seven cars constructed at Kanyike Skilling Centre is named after him.

"I have been one of the mechanics who constructed it and I'm proud that it's called Ssemusu," the chubby teenager told the press when the cars, an imitation of Formula One cars, were launched last month.

Ssemusu and his cousin Abdurahman Ddamba, aka Obama, who is in senior four vacation, drove separate vehicles in

a demonstration that wowed journalists but is soon becoming a regular spectacle in Nansana, Wakiso District.

The boys raced the cars as they negotiated the potholed road that connects their garage to the trading centre. The sound from the machines, as if from racing motorbikes, invited neighbours and passersby, though few thought these machines were purely manufactured in this humble hood, which some 15 years ago was a village despite its proximity to Kampala.

"Those are the stereotypes we want to fight and convince our people to believe that fellow Ugandans can produce quality stuff," said Muhammad Ddamba Kanyike, the chief engineer at the skilling centre and vision bearer of the Formula Seven project.

"Supporting local manufacturing and

production is the only way we can develop as a country. That's what has made China an economic powerhouse."

## Making, safety, cost

Ddamba first tried manufacturing a race car to entertain the extended family's children during the Covid-19 lockdown in 2021 when movement was restricted.

"But the first product did not match the standards I wanted," Ddamba recalled the project's baby steps.

So the past four years have been of research and trials "until we reached the level we think is good enough for the market, countrywide."

Technical ability is paramount. "It requires a lot of calculations and trials to ensure the wheels are well aligned, and move in sync," Ddamba said. One wrong measurement, and everything goes wrong.

The biggest challenge was the suspension system which includes the tyres, springs, shock absorbers, and all the linkages that connect the vehicle to its wheels.

They had to ensure that it efficiently absorbs road shocks, provides a smooth ride, maintains tyre-to-road contact for steering/braking, and supports the vehicle's weight.

After several experiments, that was sorted. And the machines were very fast. But another important issue emerged: driver's safety.

"We returned to the drawing board. We installed stronger bars around the cockpit so that in case of any incident, the driver is safe."

The bars have since been modified to remove the sharp edges and very soon, Ddamba said, they want to use more fibre than steel, "because fibre is safer and lighter."

Formula One cars are made of advanced materials like carbon fibre, titanium, magnesium, steel, aramids and zylon, high-performance plastics, among others to produce a lightweight yet high-strength machine.

## BRIEFLY

**Brand Name:**  
Formula Seven

**Source of Material:**  
Scrap

**Estimated Cost:**  
Shs35m

**Chief Engineer:**  
Muhammad Ddamba Kanyike

**Target:**  
Creating sport to employ youths 1992 to March 2017

But Ddamba said most of the materials he uses are sourced from scrap steel and aluminium. For the tyres, they use mostly those from quad bikes, or small cars like the Toyota Hijet, commonly known as Enyongeza.

"We are borrowing the Chinese model of using readily available resources to produce the best but affordable product."

However, sometimes they buy new materials like tubes and bars, though it hikes the cost of production.

Ddamba said building one Formula Seven car may cost about Shs35m (nearly \$10,000)—the average cost of most saloon cars in Uganda—though not any close to the price of a Formula One car which costs between \$12m to \$20m (Shs43b to Shs72b yet the average national sports budget is around Shs48b).

He said this is still work in progress. To bolster its safety, they must install seatbelts, an airbag and the driver must wear a helmet whenever he is in the cockpit.

"We also don't entertain smokers and drunkards," Ddamba emphasised.

## Engineering a family job

Ddamba's father Abdullah Kanyike, was the chief engineer of Uganda Car Company and also the engineer of Sir Edward Mutesa II's Rolls-Royce Phantom IV, which was rebranded and handed over to his son Kabaka Ronald Muwenda Mutebi II in 2022.

When Mzee Kanyike died in 1999, Ddamba had relocated to England, where he would later work as a chef for a food company that served the National Health Service.

When he returned home in 2005, Ddamba joined his brothers in carrying on their father's engineering legacy. He also inherited his father's docket as the ground support engineer at Entebbe Airport.

Kanyike Skilling Centre was another brainchild. "We have the engineering skills but our brother added an advantage of being educated," Kassim Kasasa said of his little brother Ddamba who studied engineering in Pakistan in the early 90s.



**Smart Power.** A Formula Seven car has a design that balances speed with fuel efficiency comparable to a 250cc motorcycle, using mostly locally sourced materials.



## The Right Mentality.

We want to fight stereotypes and show that Ugandans can produce quality products. It takes careful calculations and trials, but building vehicles from scratch is how we develop skills, create jobs and grow as a country. — Muhammad Ddamba Kanyike, Chief Engineer, Kanyike Skilling Centre & Formula Seven project lead

## Why Formula Seven?

The cars can thrive off-road, on grass, and tarmac, which versatility is required for any new business venture. They run on a five-gear manual transmission and, Ddamba said, they can run up to 200km per hour yet he compares the fuel consumption capacity to that of a 250cc motorbike.

What's more, "We are also going to make ones which are electronic because we also care about our environment."

But why Formula Seven? "You can't determine whether Museveni is good or bad, right or wrong before trying his ideas," Ddamba said, explaining that Museveni has always advocated for prioritising science to boost local production and reduce the overreliance on imports.

"That we can afford to come up with such an innovation, in our simple ways, shows that if we get the right support, we can achieve greater things."

He added: "We named our cars Formula Seven (F7) so that they can easily be associated with Uganda, different from globally reputable Formula One. But the name is also a dedication to our president who is a big advocate for such innovations."

## Skilling, employing youths

Obama and Ssemusu, the teenage mechanics, belong to the 22.7 million Ugandans aged below 18, according to the 2024 National Population and Housing Census. And soon when they enter the 18-30 age bracket of 10.7 million young adults, they may have enough engineering skills to create or find jobs.

Ddamba strongly believes that projects like his can greatly help in absorbing the unemployed youths, who worsen Uganda's dependence burden.

Ddamba wants the project to also be a training hub for students in the new curriculum which emphasises practical training. Already Mengo Technical Institute students do industrial training at the Kanyike Skilling Centre.

"We make this vehicle right from scratch until it's ready for driving. Where else can a student get such a full package?"

"And your mechanical engineering is one of the sectors that employ a big number of people."

Here's Ddamba's vision: first, teaching the youths how to manufacture the cars hands on, and then how to operate them. And if people embrace the project, Ddamba will produce enough cars, so that racing teams are formed across the country.

That will give birth to the first ever Formula Seven competition, perhaps in a league format and a possibility of the first off-road car racing federation in Uganda.

That will create a multitude of jobs for drivers, people who sell food and other stuff at the events, the mechanics who servicing the cars, the way it is in Formula One, among others.

## BUILT LOCAL

**Skills First.** Formula Seven challenges the notion that innovation must be imported, showing how practical skilling, local materials and patience can unlock engineering solutions that speak directly to Uganda's unemployment challenge and industrial ambitions.

Ddamba also expects companies, especially in the oil and gas sector, like Shell, Total, Stabex, City Oil, among others, as potential sponsors or advertisers to race teams and individual drivers.

That's how sport has absorbed unemployment in Europe, Asia and America. The cars will also need fuel.

What's more, Ddamba believes, unlike football, athletics, music and the likes, racing does not require a talent, "just training is enough to make you a good driver. And you don't need to start young."

There's also a tourism angle. "If our neighbours Kenya, Rwanda, South Sudan, pick interest and join us."

## Need for govt help

Most of the work that builds the Formula Seven cars involves welding. But when we first visited Kanyike Skilling Centre in September, power had dimmed to levels that could not power the welding machines.

But when power is at optimum level, Ddamba said, the facility can produce about 15 cars per month. That requires a fully fuelled standby generator to avoid losing time.

That is why Ddamba believes that for the project to reach full potential, it will need a hand, especially from the government.

"We are still at the incubation stage and we need a tax holiday to be able to import high quality material affordably. Some five years of tax exemption may give us a strong foundation," Ddamba said.

"Our primary goal is creating jobs, especially for the youths which is a priority in the National Development Plans in guaranteeing a prosperous future of our country. And in the long run, these young men and women will be able to earn a decent living and pay taxes."

Another area where the project needs government support is in the form of facilities.

"We need a facility where teams will converge for competitions. But it's much easier than building a football stadium. If the government allocates us land, all it takes is digging gravel roads and raising hills where spectators stand to watch."

Whether it is in Lubigi just next door, or in Nakasongola, because this is a personal initiative with a national perspective." That's why he painted the cars in the Uganda national colours.



**Vision Builder.** Chief engineer Kanyike (C), the architect of the Formula Seven project, who oversees work at the skilling centre, is keen on training future engineers.