

Vikyno to Victory: Transitioning from Vikyno Diesel Engines to Sustainable Alternatives



Team Vikyno to Victory

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The problem

Video:

https://drive.google.com/file/d/16riCliK3Ceq5TWDeTvfmmmlzZWTD5us4/view?usp=drive_link

The problem

We think **the widespread use of outdated technologies**, such as Vikyno diesel engines, contributing to significant environmental challenges and endangering public health and safety in South and Southeast Asian developing countries is the top priority obstacle to successful human development.

In our region, Vikyno diesel engines have come to represent concern for the environment and the general welfare in South and Southeast Asian developing countries' bustling thoroughfares for the past few decades.

**VEHICLES POWERED
BY VIKYNO ENGINE**



**VIKYNO ENGINE IN
CONSTRUCTION AND IN
GENERATOR**



IMAGES OF THE USEAGE OF VIKYNO DIESEL ENGINE

**VIKYNO ENGINE IN
AGRICULTURAL
SECTORS**



**BOATS POWERED BY
VIKYNO ENGINE**



The problem

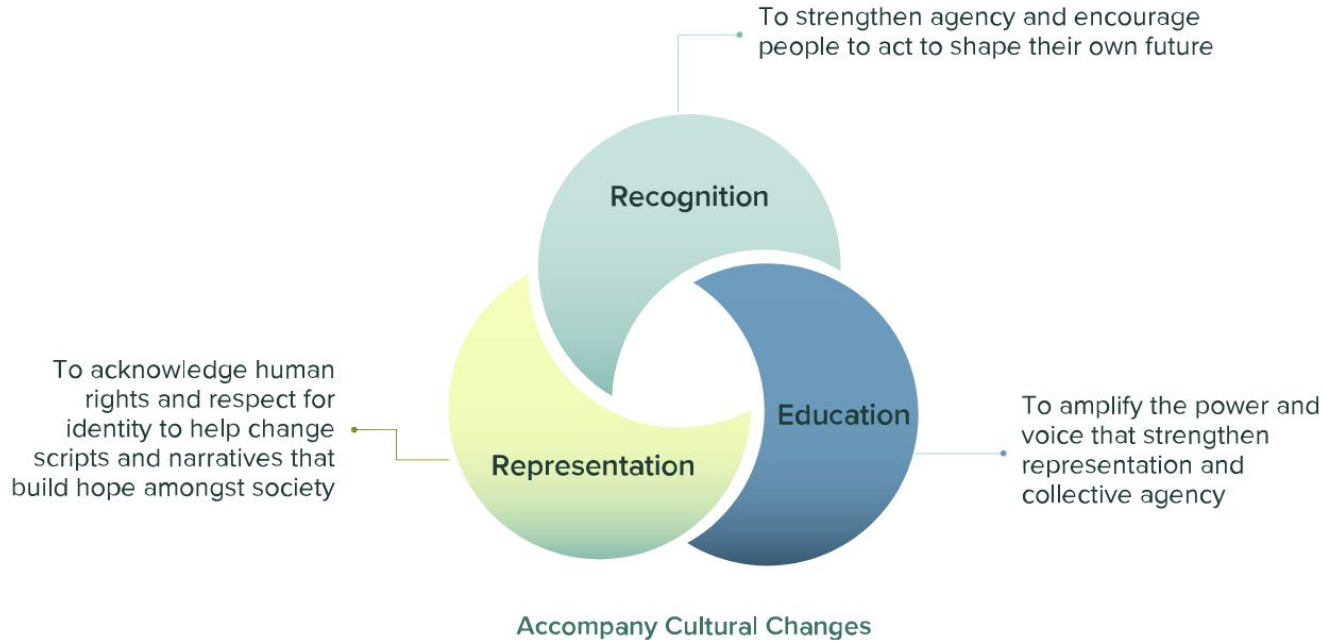
Here are how the problems have affected our community:

- Smoke & CO2
- Excessive consumption
- Noise pollution – it is very hard for families to sleep if they live by the side of the road
- Rise in accidents
- Low efficiency

Cultural change to promote collective action is necessary



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To successfully address this problem

In our research we developed our own framework of 5 dimensions in addition to cultural change to make the solution possible:

- **Policy** – bring the issue to political leaders
- **Planning** – build infrastructure for alternative engines
- **Privatization** – most India farmers buy/sell to the government; boosting private agri sector helps farmers afford new technology
- **Procurement** – supply chains for hydrogen engines
- **Pricing** – making engine prices reasonable; reduce government's role

What success looks like to us

We think it is most important to implement a better alternative that is:

- Cost effective
- High efficiency and durable
- Simple to install and easy to manage
- Suitable for small machines/vehicles, as most farmers have small lands

In our project “Vikyno to Victory”, we represent **Hydrogen IC engines** as a potential alternative that meets these criteria

Benefits

Feasibility: Despite the lack of a hydrogen supply chain, the hydrogen IC engines themselves are proven technology (technically feasible)

Impact:

- Enhanced fuel efficiency and reduced resource consumption
- Does not endanger public health due to excessive noise pollution, air pollution, or poor controls

Diesel powered engines vs Hydrogen IC engines

Diesel Powered engines	Hydrogen IC engines
Abundant carbon/greenhouse gas emissions negatively affect the environment.	No Scope 1 carbon emission as it uses hydrogen fuel.
Lower mileage: Can drive max 25 miles/Liter.	Higher mileage: Can drive max 86 miles/Liter.
Max 15-20 minutes to reserve.	Max 3-5 minutes to reserve.
Creates noise pollution.	Comparatively quieter resulting in reduced noise.
Very expensive as it uses diesel.	Use hydrogen fuel and is very cheap comparatively; cost effective.

Why collective action matters to achieve success

- We think these forms of collective action are necessary to adopt hydrogen IC engines:
 - **Build infrastructure:** hydrogen supply chain and fuel stations
 - **Educate farmers & workers:** 60% of Indian workers are in agriculture and they are not aware of environmental impacts, cultural change is needed
 - **Collaborate & work with organizations and government:** Indian farmers face a lack of representation to participate in policy-making, and there must be collaboration between state governments and with UN agencies (for example: Punjab/Haryana water program led to cultural change among farmers)
- We think young people can contribute effectively to this collective action by:
 - **Raising awareness** about the environmental and public health risks
 - **Advocating** by signing petitions & writing letters to authorities
- The UN can support by **listening to youth perspectives on local obstacles** to change