Problem:

Ekaksh: It's monsoon season in India. A family is on their way home when the rain intensifies. Soon, roads begin to disappear under a fast-rising tide of water. Within minutes, they're stranded, their vehicle submerged up to the windows. Rescue services are overwhelmed, and time is slipping away. For many families in India, this is not an isolated incident but a recurring nightmare.

Parantap: Floods are among India's most deadly natural disasters, affecting more than 20 million people yearly and causing damage of billions of rupees. Just last year, record-breaking floods struck Assam, Bangalore and Kolkata submerging entire villages, displacing thousands, and making rescue efforts nearly impossible due to submerged roads.

KP: And as climate change accelerates, these life-threatening floods are only becoming more frequent and severe. In these moments, the lack of accessible flood-ready vehicles puts lives at risk. What can be done to make cars capable of adapting to these extreme conditions and offering people a chance for survival?

Introduction:

Ekaksh: We the students of Lotus Valley International School Noida have worked day and night to make this vehicle attachment kit which will save lives of thousands of people. Introducing PERCY a transformative, attachable module that empowers standard cars to navigate land and water when roads are submerged.

Parantap: Designed to be accessible, cost-effective, and adaptable, PERCY brings amphibious functionality to everyday vehicles, providing a reliable lifeline for flood-prone areas. With widespread adoption, PERCY could also decrease the strain on emergency services during floods, allowing them to prioritize severe cases.

Working:

Ekaksh: PERCY has multiple depth sensors and air pumps, along with high-fidelity depth sensors, to continuously monitor the water level. When floodwater rises above a critical level, PERCY will activate its floatation mechanism, allowing the car to float, ensuring safety.

Parantap: PERCY's wheels are designed with specialized spokes that function as propellers in water, allowing smooth navigation across flooded areas. In future models, we aim to enhance this capability with custom-designed tires featuring paddle-like spokes, enabling drivers to better control their speed and direction in the water.

K.P: Depth sensors, for example, are already proven in automotive and marine applications, ensuring that PERCY's water level monitoring systems are reliable and responsive. Inflatable tubes, typically found in emergency flotation devices, are lightweight, durable, and capable of rapid inflation, which makes them suitable for quick deployment in flood scenarios.

Feasibility:

Ekaksh: The modular nature of PERCY's design, allowing it to attach to existing vehicles, further increasing its feasibility by enabling it to work across multiple car models without requiring extensive customization. Additionally, our design's simplicity makes it feasible for production at scale. By focusing on accessible, proven technologies, PERCY has a relatively low manufacturing cost, which is crucial for widespread adoption.

Parantap: We are conducting tests to ensure that all components can endure repeated exposure to water and wear and tear over time. In terms of practicality, PERCY has a straightforward installation process, making it user-friendly and feasible for both private and public applications in areas frequently impacted by flooding.

Market plan:

KP: Our market plan is centred on scalability and strategic partnerships. Rather than manufacturing a new vehicle from the ground up, we're taking a streamlined approach by patenting PERCY as a modular attachment. This means PERCY can be integrated into existing car models, making it accessible, adaptable, and affordable for a wider audience.

Ekaksh: Our target audience includes car owners in flood-prone areas, government and municipal disaster-response agencies. By partnering with well-established car manufacturers, we'll bring PERCY's technology directly to consumers without disrupting their choice of vehicle. Our attachment could be added as an optional feature in select vehicle lines, allowing manufacturers to offer an innovative solution that aligns with growing climate resilience needs.

Parantap: In addition, we plan to collaborate with government agencies and NGOs focused on disaster preparedness to pilot PERCY in high-risk areas, demonstrating its effectiveness in real-world conditions. By working with both private manufacturers and public agencies, we'll expand PERCY's impact, ensuring that more people have access to life-saving technology when they need it most.

Future scope:

KP: The automobile industry is massive, with millions of vehicles on the roads globally. In India alone, there are over 300 million registered vehicles, and this number is only growing. As climate change intensifies, the frequency and severity of natural disasters, including floods, will continue to rise—making this problem urgent and enduring. Flood-prone regions worldwide are facing unprecedented risks, and it's clear that solutions like PERCY are no longer optional—they're essential."

Parantap:

PERCY's modular design gives it incredible scalability and adaptability, allowing it to be retrofitted onto existing vehicles. This makes it a versatile and accessible solution, capable of transforming everyday cars into amphibious vehicles without requiring a completely new purchase. In this way, PERCY can serve not only personal vehicles but also emergency response fleets, delivery services, and public transportation in flood-affected areas.

Conclusion:

Ekaksh: PERCY isn't just a product; it's a vision for safer, more resilient communities in the face of climate change. By transforming ordinary vehicles into adaptable, amphibious responders, we're providing a practical, life-saving tool that empowers people to protect themselves and their families during floods.

Parantap: With an innovative, modular design that's accessible, effective, and ready for real-world challenges, PERCY stands to redefine personal safety in disaster situations. Together, let's bring this vision to life and make flood preparedness a reality for everyone.