

# **What worked well in Grassroots Innovations practices & learnings from collaboration with Corporations**

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## **Abstract:**

While building an inclusive innovation ecosystem to provide institutional support, multi-stakeholder partnerships and resources are necessary for spawning and scaling grassroots innovations. During the journey of creative minds to market, the sustainability of these partnerships depends on the mutual willingness to learn from each other and build on each partner's capacity[Gupta et al 21].

During the one year pilot project with seven grassroots innovators from different geographical regions in India, an attempt was made to create an ecosystem where corporate leaders, academia, civil society, market actors can support grassroots innovators to further disseminate their innovations. The details of the pilot are presented as “Scaling Grassroots Innovations: Insights from Pilot Interventions in Indian Villages” at the 10th International Conference on Research into Design, IIT Hyderabad, India, 8-10 January 2025. Such collaboration between formal and informal systems is uncommon. There is a gap between corporations and grassroots innovators in terms of scale & scope of operations, scope of supply chain, distribution, efficient manufacturing systems and sustainable businesses. This gives rise to challenges in the diffusion of the grassroots innovations.

This paper, reflects on the lessons learnt from a pilot experiment to design and execute such an ecosystem. We draw upon some replicable heuristics that grassroots businesses can learn from each other in terms of marketing models, co-creation, overcoming resistance to change, circular economy and preventive marketing models. We also explore the practices from the formal sector that can be integrated into grassroots businesses; likewise frugal problem solving methods that corporations can learn from grassroots innovators.

## **Introduction:**

The limitations of market forces or state or even civil society to meet some of the unmet needs is well recognised. In fact, sole reliance simply on these actors is not sustainable especially due to the lack of sensitivity, scalability & resource constraints. This pilot project explored the penta-helix model for grassroots innovation driven rural development. The purpose was to address the unmet needs by leveraging the diverse strengths of multiple stakeholders-public, private, academia, civil society, subject matter experts for supporting Grassroots Innovators. Fig 1 shows how we imagined different roles played by the actors. While the Grassroots

Entrepreneurs are solving the unmet needs, their present sales strategies generate largely local business except in a few cases. The Corporates can play a role to share some of their formal operating procedures, provide access to their social capital like sales, after-sales network, and connect with stakeholders like finance partners etc., Academia can help with the analysis and suggestions in the improvement of designs and public agencies can support in necessary certifications and policy support. Subject Matter Experts can help in improving their design. Although we couldn't clearly anticipate how the interplay between such actors could affect the outcome, we learned along the way. We broadly imagined bringing these actors together to scale up these grassroots enterprises(who are motivated to scale), to meet the unmet societal needs. This interplay is affected by several factors including the interests / priorities of each actor, power asymmetries[Gupta et al 10], gaps in understanding of mutual limitations, the willingness to learn from each other and enhance each other's capabilities by acknowledging that frugal and creative innovations can emerge from grassroots[Gupta et al 21].

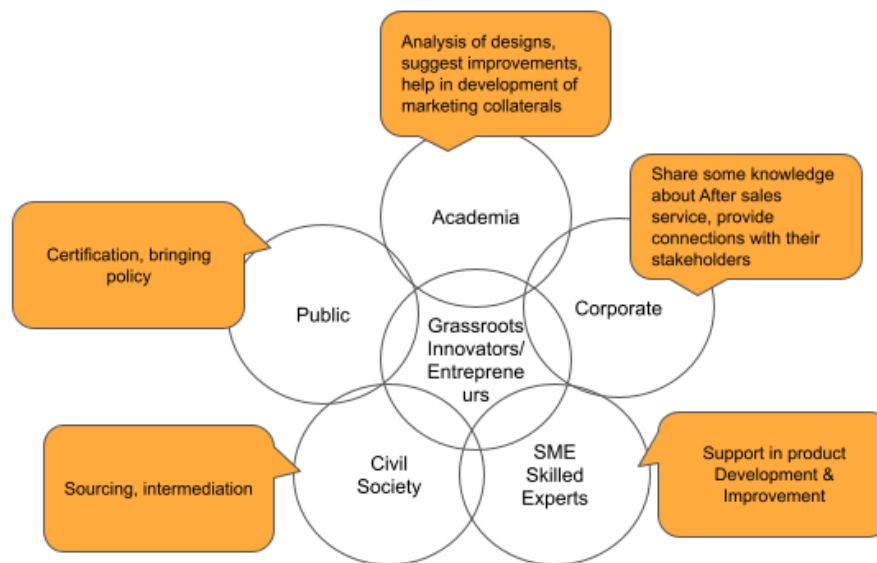


Fig 1

In this paper, the need for context-sensitive approaches are illustrated through case studies. We would like to particularly highlight the heuristics of grassroots innovations that can be replicated among other grassroots innovators through some of the case studies. We will identify the practices that could be absorbed by the grassroots enterprises from the corporations and vice-a-versa through collaborative interaction between corporate and the grassroots entrepreneurs, of course with the intermediation of civil society[Fressoli 287].

### **Case study 1: Marketing models for expensive farm machinery:**

Mr. Ghani, who makes a manure spreading machine - costing Rs 6.5 lakhs, could scale within 3-4 years. After talking to people who bought more than two machines each, one could learn how such farmers could recover the investment within a year or two by providing services to other farmers.

This is a good case of Individual custom Hiring vs Individual Owning. Such expensive machinery can be a burden for individual small farmers to buy. However, Intermediaries can buy these machines to provide rental services / wet leasing providing new business opportunities to the intermediaries. “Marketing models” that can emerge to support Individual custom hiring can be beneficial to both farmers and the individuals. One could not generate enough additional income just by saving time on one’s farm.

In addition, finance facilitates the adoption of new technologies. Small farmers might lack the traditional collaterals that are required by conventional lending institutions [Bhardwaj et. al 91]. However, banks do not consider this potential yet while financing. Although, in the case of tractors, the business opportunities tractors could create is considered for financing rather than mere traditional collaterals. We need more such specific instruments of financing to promote grassroots innovations.

### **Case study 2: User centric Design of the product for achieving scale.**

The Neerain rainwater filter, developed by Mr. Amit, demonstrates the importance of user-centric design. While initially targeting households, the product gained traction in industrial applications, selling over 3,000 units. Industries used the filter for water storage and recharge purposes. Neerain’s adaptability, offering single-filter, double-filter, and manual bypass options, showcases the need to understand user patterns and tailor products accordingly.

### **Case study 3: Leveraging partnerships & Scaling across favourable regions(contextual research for regional adaptation)**

Sanjay Tilwa’s agricultural machinery highlights the importance of regional adaptation. For instance, the groundnut digger originally designed according to the local conditions of Gujarat, could be sold in Tamilnadu and not so much in Telangana. The groundnut digger’s success in Tamil Nadu stems from its alignment with local cropping patterns and soil types. Understanding regional contexts, such as the prevalence of tube wells and favourable power distribution in Tamil Nadu in this case, is crucial for scaling innovations across diverse geographies.

### **Case study 4: Co creation process**

Mr. Nishi’s co-creation approach integrates local knowledge with external expertise. By collaborating with engineers and embedding local insights into solutions rather than forcing an

external solution, he demonstrates the value of participatory innovation. This process fosters a deeper connection between technology and its end users.

### **Case study 5: Resistance to Change**

Resistance to change, as seen in one grassroots innovator's reluctance to accept feedback, can be both a challenge and an opportunity. Because the way they conceive the idea, they think it's the best way. However slowly one can make a dent on the resistance. Resistance to change is not always bad, we would have lost language, clothes, food for example, resistance to change can be positive. Because the less angular you are, the less difference you make. While resistance preserves cultural identity and traditions, gradual adaptation can drive meaningful innovation.

### **Case study 6: Circular economy & Salvage economy**

Mr. Mansukh and other innovators repurposed parts from automobiles like differential, etc for creating Sanedo, an affordable mini tractor often seen in Sourashtra, Gujarat. This was even before the circular economy gained traction. Repurposing parts not only solves non-affordability but contributes to circularity. Currently, Most corporations do not organize the scrape components. Some professional second hand dealers may exist in some countries. Second hand parts, over the years, one can think of not junking, if it can be organized & collected by incentivizing customers with salvage prices. [Ejaz and Hegedús 138] shared Product as a service model End Of Life products can be collected from customers and redesigned, refurbished or disassembled. Implementing such models for circular economy also needs collaboration from different stake-holders [Dennison et al 8] especially from public agencies for certifications related to parts safety.

### **Case study 7: Preventive Maintenance models**

Mr. Sanjay goes by himself from house to house to provide service to his customers before the harvesting season. Indian culture is not about preventive maintenance like preventive healthcare. One exception is the case of sewing machines where maintenance is made easy by their design.

Manuals and Videos for preventive maintenance & implementing models like training local mechanics(similar to cases of one of the very big automobile makers) can be explored.

**Learnings from corporate to GRI:** For example, emphasising the importance of after-sales networks and systematic procedures to be set before expanding the sales network. Similarly, preventive maintenance models like designing maintenance manuals can be very helpful in reducing the recurring cost of the buyers through a not very expansive infrastructure.

### **Engagement/Interplay between Corporate & Grassroots Innovators:**

The gap between grassroots enterprises and multinational corporations (MNCs) spans scale, scope, systems, and sustainability. An MNC has several strengths such as: a) large scale

operations on a global scale, with extensive supply chains & distribution networks, b) scope of targeting international markets with advanced R&D facilities, c) global design inputs and international collaboration, d) highly structured systems incorporating sustainability into their business strategies. Their weakness may be that they often rely on resource intensive systems. On the contrary, grassroots enterprises are often boot strapped by the grassroots innovators and rely on local knowledge and limited resources which creates constraints such as limited working capital, limited design inputs etc. This limits their scale and scope to expand their business. Despite these constraints, many of their machines have been notably sold, demonstrating their ability to address the critical needs in underserved markets with economic and ecological sustainability. Mutual learning and Empowerment is important to overcome these gaps & collaborate.

### **Corporate engagement:**

While the corporations have exhibited an open mindset to seek information from grassroots enterprises without conflict or overconfidence towards outcome, the role of the corporation has often been of a funding agency and external support rather than active co-creators. Through the pilot, we could identify actionable areas of support, like providing access to their sales networks, supply chains, after-sales service and leveraging social capital like finance partners for product finance. One year was too short a period of time for meaningful & durable engagement to emerge; the fact that top management representation went to the field & studied the conditions in which grassroots innovators with much less training & resources than available to corporate engineers, solved real life problems effectively underscored the transformative potential of such collaborations.

### **Role of Individuals & Institutions as Catalyst:**

Individuals/ institutions can steer the will/curiosity of corporate leaders and increase their interest in the Grassroots sector. Grassroots innovations exist in many countries, However, in India, they have been given a platform[Gupta 50]. Such actors can bring sensitivity / humane angle where, often these third world countries are seen merely as markets or clients of corporate social responsibility(CSR)[Gupta 29]. Otherwise, It is uncommon for a seasoned corporation to get into a social impact fund etc.

### **Mechanisms for Mutual Empowerment: Aligning Expectations**

The corporates could appreciate the necessity of frugal heuristics of grassroots innovations. Mechanisms like Various on-ground visits, empower the corporates to appreciate that, contrary to the normal approach of costly long drawn internal R&D based products, the frugal design and execution approach in the grassroots innovations offers a learning opportunity. These innovators use minimal investment to create simpler, cost-effective machines serving small farmer needs somewhat adequately. This approach can be significant in rural India, where there are huge limitations in the purchasing power of small farmers and can lead to local development. The

nature of the grassroots innovations are often lacking robust sales networks, supply chains, and comprehensive business structures. For certain products, web based sales could suffice without such structures, while for other products this becomes a critical gap. However, insisting grassroots enterprises to create such expansive infrastructure shall place heavy monetary burden and constrain them. It is realised that these enterprises may not operate as fully integrated systems such as an MNC, but instead require streamlined and practical solutions. Hence, the focus should be on enabling less costly and simple solutions rather than resource intensive systems needed with large-scale machinery like tractors. This perspective underscores the need for frugal, context-specific innovations that align with the realities of grassroots ecosystems.

### **Corporate Engagement Challenges**

- **Limited Involvement:** Corporations often act as funding agencies rather than active co-creators.
- **Institutional Barriers:** Lack of mechanisms to involve multiple departments and technical experts limits engagement.
- **Superficial Interactions:** Short-term engagements, such as introducing innovations at dealer conferences, fail to establish meaningful collaboration.

### **Summing Up:**

The case studies highlight some of the strategies for scaling grassroots innovations that can be adopted from each other and the potential of mutual learning opportunities by bringing corporates and grassroots innovators together. This pilot has given corporations a chance to understand problems on the ground and helped in diffusing grassroots innovations through their social & knowledge capital. In the future, corporations can explore collaborations with grassroots innovators as co-creators and engage in more meaningful ways. The following are our recommendations that facilitate more such interactions between grassroots innovators, corporations and improvements in the current systems that can help diffuse grassroots innovations.

1. Moderated forums for community of Grassroots innovators for knowledge exchange and mutual support.
2. New Finance models by funding organizations considering Individual custom hiring models for farm machinery(especially by grassroots innovators)
3. Improvements in policy to support using repurposed parts as part of a circular economy.
4. Living Learning labs with Grassroots Innovators for Corporates to understand and appreciate unmet needs, frugal heuristics.
5. Workshops & On-ground visits with multiple departments from corporations in addition to top management can sensitise corporate teams to grassroots approaches, enhancing support in different areas like sales, supply chains, and product quality.

6. While making the transition after the pilot, can the engagements of corporate and individuals who acted as catalysts be kept separate? How can we keep the link open instead of a clinical approach once the pilot ends?

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