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## **SUPPORTING LIVELIHOOD BY MANUFACTURING AFFORDABLE, HIGH FILTRATION CAPABILITY MASKS**

With the world-wide spread of Covid, the use of face masks gained prominence as a preventive strategy. However, the standard face masks (e.g surgical masks) lacked the viral filtration capability. Alternatively, the N95 masks were scarce and/or prohibitively expensive.

Problem #1: Standard masks subpar compared to N95 and around March 2020, N95 masks were too expensive and or scarce.

Problem #2: Concurrently around April 2020, in India, a lot of day workers and artisans lost their livelihoods as a result of massive lock downs (aka stay-at-home orders).

Connecting these two problems, our team (Stanford physician, MIT Engineer, India-based material scientists and social entrepreneurs) created and tested a special filter with N95-level filtration capability. Then we engaged local women self-help groups to make cloth masks to encase these special filters. Consequently, excellent quality masks were made available to the public while supporting 100s of families during a tough economic period.

### **Results/Outcome**

These results were achieved during India's strict, nationwide stay-at-home mandate.

- \* Scientific/Technical: Developed special filter with excellent filtration (>95%PFE, >99% BFE) and met ISO standards for differential pressure and splash resistance.

- \* Social: Established strong relationships with women self-help groups.

- \* Social Impact: Established innovative business model where a significant portion of the profits are returned to the self-help groups. Employed over 500 women to make masks locally and sustain livelihoods

- \* Outcome/Next Steps: Recognizing the impact, we have now received funding from Gates Foundation/Grand Challenges Canada to expand the footprint of this project.

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- \* Funding to expand the work: Secured (1) Grand Challenges/Gates Foundation funding and (2) local for expanding the scope of the work

## **COMMUNITY PARTNER**

SELF EMPLOYED WOMENS ASSOCIATION (SEWA)

SELCO FOUNDATION

ABHIHAARA

SANKALPA RURAL DEVELOPMENT SOCIETY

TATA POWER COMMUNITY DEVELOPMENT TRUST (TPCDT).

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PARISODHNA TECHNOLOGIES