



Stichting Vivia Foundation is a public charity organization. It facilitates new pathways for the improvement of humanitarian livelihoods and environmental stewardship by applying global innovations in food and health. The Vivia Foundation works to develop and accelerate programs aligned with the Sustainable Development Goals (SDG's).

Vivia Foundation initiated a program called "Clean Works India" which brings sustainable processing to the rural fields, utilizing climate-smart, clean energy solutions to significantly reduce food waste. Two pilot programs are currently underway in the states of Andhra Pradesh and Maharashtra, which are areas of rich agricultural production of diverse fresh produce crops where post harvest food waste is prevalent.

Clean Works pilot programs incorporate emerging and advanced technologies for simple, easy to implement rural solutions. Programs involve a consortium of farmer-producer organizations, cross-sector leaders, private sector companies, agri-food organizations, preeminent research universities, advisory agencies and individual experts in India. These leaders and specialists are committed to achieving a more efficient, self-reliant, sustainable and operational model that is scalable for India's food supply chain to:

- Significantly reduce post harvest waste in India. *Note: Currently, 40% waste for harvested fresh fruits and vegetables, with valued losses of \$8.3 billion.**
(*Source: Economic Times, January 25, 2016, estimated produce losses in India, determined by the FAO)
- Integrate specific interventions and methods to improve the livelihoods of small-holder farmers and their communities;
- Employ self-reliant, climate-smart, clean energy and clean water production using "off the grid" solar energy systems, clean energy conversion and clean water processing;
- Encourage sustainable farming methods, without the use of toxic chemicals;
- Bring increased value for traditional, diverse native crop species;
- Integrate innovative food production and processing of traceable, food-safe systems using mobile data and sensor technologies;
- Introduce technologies to extend the shelf life and improve the quality of perishable foods and beverages, such as innovative packaging, pathogen monitoring, dry chain methods and cold chain storage;
- Introduce integrated farm management including plant and soil inputs which are safe for animals and humans, non-toxic, and organic;



- Improve efficiency for harvesting, production, processing, storage and distribution, with interoperable, simple to use mobile data systems;
- Generate higher quality produce output, vastly improved market access resulting in more reliable income potential for farmers;
- Provide opportunities for farmer – producer education and agri-food technical training, skills development and entrepreneurship in sustainable systems, agri-food, logistics, high tech, smart farming, mobile data and engineering;
- Improve human health, nutrition and livelihoods through a “clean” and more efficient, self-reliant food system.

The Vivia Foundation identifies and integrates new and emerging technologies. Research cooperation has been established with Wageningen UR in the Netherlands, and University of California, Davis in the USA, with involvement by other agri-food research institutions in India. Vivia Foundation is working with its university partners to involve faculty, provide research access and graduate student participation for the program’s implementation.

The Clean Works pilot model was based on a Self-Sustaining Food/Beverage Processing Facility, which is operational on University of California, Davis campus. This model helped to test, develop and guide the engineering concept for creating off-the-grid “Clean Works Centers” as a self-reliant agri-food model for rural India.

Recently, Vivia Foundation facilitated a “Clean Works India” delegation of rural agri-food expert farmers and technologists from India to visit California, USA in November 2017. These Indian delegates met with agri-food industry leaders in California’s Central Valley and convened with UC Davis faculty and other UC Davis-affiliated companies, multinational food leaders, food entrepreneurs, educational organizations and sustainability experts. The delegates participated in the Global Action Summit in Nashville, Tennessee to meet world leaders and innovators in the agri-food, health and financial industries. Outcomes are now being incorporated into the planning design and technology implementation and research projects of Clean Works India pilots in Andhra Pradesh and Maharashtra, India.

Vivia Foundation Website: www.viviafoundation.org

Clean Works India: <https://viviafoundation.org/programs/post-harvest-waste-reduction/>

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