

## [A Step Towards Sustainable Rice Ecology in India by SeedWorks](#)

*Courtesy - SeedWorks International Pvt. Ltd.*

***“If you desire peace, cultivate justice, but at the same time cultivate the fields to produce more bread, otherwise there will be no peace” - Norman Borlaug***

As an essential component of human life, agriculture has been challenged time and again by climate and natural hazards, population growth, and scarcity of arable land. It won't support us in the 21st century when there are 10 billion people living on a hot, resource-stressed planet, the only option is peace through sustainable food supply.

- ❖ Rising to the challenges, course corrections & empowering growers to feed the world is the current need. However, can we produce enough food to feed the growing population? It is a much-debated topic these days.
- ❖ Rice is the largest staple food which is feeding people globally. There is no doubt that we need to continue to invest in appropriate technologies to enhance rice productivity, reduce post-harvest, storage and environmental losses (along with addressing greenhouse gas emissions), and adapt to climate change. It is also important to bring an impactful disruption, and inclusive growth and the stakeholders in the nation have to play a larger and pivotal role towards this. Access to elite quality seeds of crop varieties that are adapted to the changing production systems and needs of farmers & end users is an essential feature of sustainable crop production.

SeedWorks is helping 0.7 Million Acres of Indian rice lands feed the nation in a sustainable and climate resilient way by bridging the gaps of rice eco system. SeedWorks International practices a multi-pronged system in ensuring the sustainability through various innovations which are mentioned below:

### [Outsmarting the weather & Environment friendly](#)

Climate-smart agriculture (CSA) is a sort of overview concept originally put forth in 2010 by the UN Food and Agriculture Organization. It is a general idea about adjusting all farms in Agriculture to better adapt to a changing climate. CSA is not a technology, but an approach which relies on the use of modified production technologies for managing risks. Our rice bowls are hurting the climate which we need to accept. To mitigate climate change, several climate smart practices related to water and nutrient management are done viz. neem-coated urea and application of nitrogenous fertilizers based on leaf colour charts reduce the total N requirement and cuts down the N<sub>2</sub>O emission. Avoiding burning of crop residue, adjusting the planting dates, modifying the fertilizer and irrigation schedules and adopting zero tillage are some of the other practices which are being followed by SeedWorks seed growers. It was found that emissions of greenhouse gases were lower in the high yielding improved varieties compared to the traditional varieties.

An example of such hybrids from SeedWorks are US 312 and US 380. US 380 the next generation Aerobic Rice having Enhanced Resource Use Efficiency (RUE) to combat climate change which is released and notified centrally. Aerobic rice cultivation requires less water (35-45% in case of US 380), nutrients and other inputs

compared to irrigated rice cultivation method apart from reduction in greenhouse gas emission (50% reduction in GHG emissions). Hence these hybrids are fit for direct seeded sowing as well and are environment friendly /climate smart hybrids. Most of the hybrids so far developed are for anaerobic conditions and the aerobic rice is a paradigm shift from legacy for climate resilience and food.

### [Empowering rural youth & women](#)

SeedWorks believes in providing life-changing opportunities for rural youth: to develop new generation agripreneurs enabling farming as service (FaaS) in bringing new technologies such as drones and multidimensional sensors to the farmers, and bringing in post-harvest precision technologies, taking banking infrastructure close to the farmers. Skill development of rural folks through various innovative training programs will help in improving their confidence levels and encourages them to choose farming as a profession, generate additional employment opportunities to absorb under employed and unemployed rural youth and developing them as change leaders.

### [Smart & Connected Agriculture](#)

Digitization transforms decision-making practices in agronomics. The immense amount of agronomic data offer insight, understanding, and quick learning. Digital farming is particularly revolutionary for farmers in India as it has the potential to remove the current information asymmetry, considering 80% of farmers in India are smallholders. Precision agriculture demonstrates that it is possible to generate a lot of data via farming machinery and combining it with geosystems and satellites, making it possible to support operational farming with location-specific data tags.

It is helping seed growers to reduce the environmental impact of their practices, and thereby increasing their productivity and to prove it is no longer unproven. Another advantage is emerging by producing large amounts of data of near-research quality, it is helping in aligning agronomic research closer to farmers' requirements. SeedWorks developed several IOT based applications to make connected Agriculture a reality in increasing the efficiency of the farmers practices. The goal of all digital approaches should be sustainable and scalable farming.

### [How is SeedWorks bridging the gap in agriculture?](#)

Seed Works innovations focus around the various disconnect in the agriculture through:

- ❖ Bridging gap between breeding objectives and consumer requirements. (Producers and consumers)
- ❖ Bridging gap between lab to land
- ❖ Bridging gap between changing environment and recommended agronomy (Climate smart Agronomy)
- ❖ Updating with changing skill requirement
- ❖ Use of SCADA, Mechanisation in process efficacy
- ❖ Bridging disconnect with technology and use of data
- ❖ Bridging disconnect with risk mitigation strategies
- ❖ Swift and accurate quality testing of seeds through AI for the speedy delivery to market.