



# Improving the wellbeing of Small & Marginal Farmers

# Introduction

Dr. Reddy's Foundation (DRF) was set up in 1996 with the purpose of improving the dignity and well-being of communities. We started by working with children and youth but soon based on the needs of the community we included small and marginal farmers as one of the key priorities. Over the past decade, DRF has impacted more than one lakh farmers' households through its agriculture and allied activities. Our agriculture program has helped farmers with small land holdings, to improve their income by reducing cultivation cost while increasing yield through access to quality extension services.

Our agriculture intervention commenced in 2010 as a direct extension model with the support of multiple CSR Foundations in twenty six locations spread across eight states in India. In the initial days, our teams worked directly with the farmers by handholding and mentoring them through the different phases. While the model helped farmers improve their income - through reduced cost of cultivation and increased yields - it soon became evident that to make the program viable, the model has to be scalable and sustainable while being impactful. This led us to redesign our program in 2015.

The design process was initiated by analysing ground realities after speaking to hundreds of small and marginal farmers as well as community members across eight states. This exercise, which lasted more than six months, included inputs from sectoral experts, peer development sector agencies, private sector players and government officials. Based on the inputs and our learnings from the earlier model, in 2016 we moved from 'direct implementation' to community-based 'farmer-to-farmer extension model' which we call as the 'Lead Farmers Platform (LFP)'.

LFP focuses on identifying and nurturing farmers who are recognized as 'local influencers' to help bridge the last-mile connect at the village level and to help improve access to 'quality extension services' and the market. We also foresee that in the long run, LFP can also be leveraged by other stakeholders like government, private players or NGOs for the holistic development of the community.

Our decision to opt for a community-based platform was based on two strong evidences. First, based on our observation, we realised that Indian farmers largely prefer to trust and seek advice from a peer farmer who is acknowledged by the community as 'progressive farmer'. Fortunately such progressive farmers are present in every village and they are willing to adopt and share new practices with others. Second, was the conspicuous lack of a strongly validated farmer-community-platform in most villages.

Further, to ensure our modified program was relevant and sustainable we incorporated stipulations like [a] community ownership [b] engagement with other stakeholders like government representatives, public research organisations such as Central and State Agriculture Universities (CAU, SAU), Krishi Vigyan Kendras (KVK) etc. or private sector players including start-ups and NGOs as critical contributors [c] institutionalise the delivery platforms with support of local stakeholders and [d] focus on interventions which can be adopted at scale and are sustainable.



Moreover, the recent third party cross-sectional studies (refer to reference no. 78) on the impact of our program in one of the project locations established that the LFP intervention led to a significant decrease in the cost of paddy cultivation (by 36 per cent for fellow farmers,  $p < 0.01$ ) and a significant increase in yield (by 25 per cent per acre,  $p < 0.01$ ), compared to farmers in the control group. The study also found a significant positive spill over to non-fellow farmers belonging to the treatment group. On an average, the intervention provided an additional income of around INR 14300 per acre.

The journey of the last ten years has been possible because of the support of partners and stakeholders. Like every journey, our journey to impact small & marginal farmers has also gone through its ups and downs, but the enormous support, encouragement and trust from partners have helped us to sail through. We look forward to continue our support of small & marginal farmers and to work for improving their wellbeing in India.

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## Challenges of Indian Agriculture

### Small & Fragmented Landholdings

While the sector has several challenges, of all the operational agricultural holdings in India, 86.21% are small or marginal holdings (<2 Ha of land), and these holdings operate 47.34% of the agricultural land. Simply put, most farmers in India operate very small farms and are curbed with a limited output capacity.

The other related issue, is that of fragmentation; which is a characteristic landholding pattern for the majority of small & marginal farmers. Since the income from the land is not enough to ensure the farmers' wellbeing, this adversely affects the farmers' capacity to invest in their farms. For farming households, the average income from cultivation is just 47% with the rest coming from other sources like 13% from livestock, 8% from non-farm activities and 32% from wages.

Crop	India	China	Asian	World top Quartile
	(yield, tons/ha)			
Rice	3.6	6.7	4.9	5.4
Wheat	3.2	5.1	3.2	4.1
F&V	10.1	15.7	14.3	15.7
Pulses	0.5	2.3	1.2	1.9

### Poor Yield

The productivity of Indian farms is generally much below global standards. For example, the average rice yield in India is 3.6 ton/hectare compared to 4.25 ton/hectare of world average. Despite being the second top rice producer globally, India conspicuously stands at 62nd position in terms of productivity. There are also large regional variations within the country. The average rice yield of Bihar stands at less than 2 t/ha whereas it is more than 3 t/ha in Punjab. The average yield is close to one ton per hectare in our operational areas of Bihar. Reasons include low and faulty input use, poor access to modern technology and rain-fed agriculture. Though there is a variation in the cost of production which affects the net returns for the farmers, overall, there is a huge gap between the potential vs what the average farmer is able to achieve in terms of yield per unit of land in the country.

### Lack of Access to Extension Services

While there are technologies and practices that have been developed to improve productivity; these developments are slow to reach the small farmer due to a weak extension system; which driven by the public extension system, continues to be the prime provider (apart from "non-

profits" or "for-profits" in some areas) of extension service to the farmers.

To elaborate further, there is just one government extension provider for 1162 farmers in India against the recommended ratio of 1:750. This obvious gap coupled with the large number of farmers and their increasingly fragmented land holdings poses a big challenge for the country to ensure farmers inclusion. It is worth noting that India spends about 0.7 per cent of its GDP (2014-15) on aggregate agriculture research including education, extension and training (AgRE&XT) as against the recommended level of 2 per cent of agro-GDP by the World Bank. Out of this 0.7 percent (AgRE&XT) of agri-GDP, agri- research and education (AgR&E) amounts to 0.54 percent at the national level while only 0.16 percent is allocated to Extension and Training.

Admittedly while digital extension system is making inroads into India's rural locations, it is still in its early stage and accessibility continues to be sluggish. Therefore, there is an evident need for a last-mile-connect at the farmer's level as the literacy level is low and farmers are unable to adapt modern technology with confidence. According to an analysis by Reuters Market Light (2015), 94% of farmers in India depend upon 'fellow farmers' as the preferred source of information, followed by 10% on agro-retailers, 4% of TV/ Radio and only 3% of agro-extension officers. Information provided by extension services is perceived to be either biased (e.g. agro-marketing companies) or less actionable due to lack of consistency, accuracy and personalization. Given this situation, there is an urgent need to improve the delivery and effectiveness of extension services in India.

### Low Adoption of Farm Mechanization

Farm mechanization has very low penetration in India (just above 40%), with the notable exception of tractors. For every 1000 hectares of sown area, we have 37 tractors along with just 2 power tillers, 0.9 rotavators, 6 levellers, 7.2 ferti cum seed drills and 0.238 in case of combined harvesters. Though the per capita land holding size is decreasing, demand for tractors is still more than other implements. It is unviable for small & marginal farmers to purchase farm equipment - especially big implements - since rental services are not prevalent in all the states for most big machinery due to lack of usage awareness. Unfortunately, without its usage intensification of farm productivity and agricultural output returns will continue to be limited for the farmers especially in the long run.

Country	Agriculture GDP (%)	Level of mechanization (%)
USA	1	95
Russia	4	80
Brazil	5	75
China	10	48
India	14	40

## Fragmented Markets

As the quantity produced by a marginal farmer is limited and spread throughout the year; the product quantity available for sale each day is extremely small, thereby forcing the farmer to depend on intermediaries for the purpose of aggregation to ensure that the transport and other logistics are cost effective. Undeniably the “access to market” continues to be a bottleneck especially for small land holders, which further paves the way for multiple intermediaries between the farmer and the consumer. This is largely due to

### 1. Farmers with small holdings have small yields:

Most farmers in India are marginal and small landowners. The surplus produce available for sale is therefore very less. Eighty-five percent of wheat and 75% of oil seeds in UP, 70% of oil seeds and 35% of cotton in Punjab, 90% of jute in West Bengal, and 86.5% paddy in overall India are sold by farmers in the village itself because the cost of transport and marketing are very high. Therefore, most farmers dispose their produce to the village traders at prices lower than the minimum support price (MSP) or wholesale prices in main mandis.

### 2. Poor storage and logistics infrastructure:

Indian farmers incur Rs 92,651 crore per year in post-harvest losses, the primary causes of which are poor storage and transportation facilities. Post-harvest losses are to the tune of 4-6 per cent for cereals and pulses, 7-12 per cent for vegetables and 6-18 per cent for fruits. Ironically, according to the high-level Dalwai committee report, an investment of Rs 89,375 crore—a figure marginally lower than the annual post-harvest losses—is all it takes to improve the state of storage and transportation facilities for food crops! Since the market is the primary medium for farmers to exchange their produce for money, lack of logistic support to ensure that their harvest reaches the markets in time, results in limiting the farmers’ ability to monetize his/her produce. This becomes even more critical in case of perishable fruits and vegetables. This leads to multiple levels of risks and creates a lot of waste, in addition to the damage due to poor packaging and multiple transfers.

Fragmented markets limit the capacity of farmers to transact with players higher up in the supply chain, and vice versa. This entails the “farm-to-fork” – which off late is being strengthened – as well as the “fork-to-farm” to be considered as an equally crucial and important component that needs to be addressed. This means, it is imperative that farmers have access to knowledge about the “market-demand” which at present is very dismal and inefficient, resulting in the farmer ending up with disproportionately high risk and relatively low returns.

## Remunerative Pricing

Ensuring remunerative prices to the farmers is one of the effective ways to achieve the objective of increasing the farmers’ income and thereby their well-being. In the Union Budget 2018, the Government of India (GoI) accepted the long awaited demand of the farmers regarding the new Minimum Support Price (MSP) at 1.5 times more than the cost of production (A2+). However, the issue of ensuring a proper remunerative price for crops will remain a major challenge unless the following challenges are addressed (1) inadequate markets and collection centres, (2) lack of appropriate infrastructure and storage facilities, (3) MSP and public procurement largely confined to rice and wheat only (30% of total production), and huge state-state variations of MSP benefit availed by farmers (4) development of necessary mechanisms like upgrading and improving the agriculture markets and e-NAM (e-National Agricultural Market) is done. On the other hand, due to the high MSPs and other quality parameters, Indian agricultural produce is not competitive in the international market, and thus, this affects its exports. Price volatility is higher for perishable commodities such as vegetables, fruits, milk, meat, eggs and fish, for which MSPs do not exist.

### Lack of Access to Finance

Another major factor is the acute lack of access to affordable credit for farmers. As per a RBI Panel report only 40.90 per cent of small and marginal farmers could be covered by the scheduled commercial banks. Over 30% of farmers still rely on non-institutional lenders, who mostly are moneylenders-cum-traders. In 2016, less than 15% of small and marginal farmers had a valid Kisan Credit Card and only about 10% of small and marginal farmers reported making any investments. Analysis of credit disbursement data from the Reserve Bank of India reveals that out of total advances to agriculture, the share of indirect finance has increased substantially over time, while that of direct finance to farmers has declined. This means, at the macro level, it would appear that there is an increase in credit flow to the agricultural sector but this has actually accrued to agro-business firms/corporations and not directly to the farmers. Hence, even with access to extension services, farmers will need access to finance to be able to make the investments necessary to apply their learning. hence banks find it difficulties in dealing with such potential borrowers

Further banking procedures can be cumbersome as they often have too many hidden charges, protracted process formalities and are often not at close proximity; which coupled with indifferent bank officials or a history of bad credentials, unemployment and the inability to maintain the minimum account balance, lack of proper ID or address proof and the non-availability of ATM in the villages can all prove to be very discouraging if not demotivating.

These burdens can be further complicated if the land is not officially distributed or re-registered (i.e. most of the holdings are still in the name of ancestors and the people who are farming don't have valid land deeds) hence limiting the banks from extending support to such potential borrowers. All these add to the uneasiness of the small or marginalised farmer from availing loans from aided banks.

### Lack of Access to Reliable Supply of Quality Inputs

There is a lack of access to reliable, affordable input supplies at the farmer level. The challenge is four-fold:

#### Credit trap

Farmers lack the capacity to invest in their crops, and thus end up taking credit from the input suppliers. This reduces their ability to bargain and to insist on a particular input/brand, and so they end up buying whatever the dealer wants to sell, which may not necessarily be what is needed.

#### Spurious inputs

Farmers are often sold spurious inputs, especially seeds and pesticides, leading to low germination and ineffective protection against pest attacks. Over-reliance upon the informal seed chain resulting in the lack of quality seed supply is another factor. These factors fundamentally affect the yield. One study reveals that non-genuine / illegal pesticides constitute ~25% by value and ~30% by volume of domestic pesticide industry in the country.

#### Lack of reliable supply

With new pests attacking the crops every year, the demand for some pesticides shoots up suddenly and the supply is not always able to keep up with the demand, leading to black-marketing and exponential price rise for these inputs. Also, there is an evident lack of interest of the private seed sector for some of the non-commercial crops.

#### Soil Degradation

Every second, India loses farm land that is almost the size of a football field due to soil erosion and urbanization. India has total 329 million hectares of land of which around 37% (120.40 million hectare) of the country's total geographical area is affected by various kinds of land degradation. On an average 16.4 tons of fertile soil is lost every year per hectare. Poor management practices like tillage and excessive use of fertilizers, or floods which bring with it a lot of sand and make the land saline and non-cultivable are some of the many reasons behind soil degradation.

### Globalized Agriculture Market

India is the seventh largest agricultural exporter worldwide and the sixth largest net exporter. Agriculture accounts for about 18 percent share of the total value of India's export.

Indian agricultural processed foods are exported to more than 100 countries, primarily in the Middle East, Southeast Asia, SAARC countries, the EU and the United States. The economic liberalization policies as well as the globalization process are also exerting strong pressures on the area allocation decision of farmers, essentially through their impact on the relative prices of inputs and outputs. This has also resulted in an increasingly forceful demand for anti-protectionist measures and removal of government subsidies and protections. It is likely that protections afforded to Indian producers and manufacturers are likely to be affected in the medium to long term future. For example, this could mean that governments in the future might not be able to ban imports when prices fall. Indian farmers, especially small and marginal farmers need to be prepared for this eventuality and be primed to take advantage of the globalized nature of trade.

### Climate Change

Agriculture is both the driver and recipient of the impacts of global environmental change. What makes agriculture unique as an economic sector is that it directly affects many of the very assets on which it relies for success like soil, water, weather, etc. Agriculture is the second major contributor to climate change in India, and an estimated 15% of total anthropogenic greenhouse gas emissions (2005-2015) are from Agriculture, Forestry and Other Land Use (AFOLU) (IPCC, 2019), directly from livestock, fertilizer production and overuse, pesticide use, leaching, and flooded fields. The current phase of agricultural intensification has been accomplished at great expense to the environment.

However, in the future it is likely that crops will have to be produced under less favourable climatic and economic conditions than those which enabled yield increases during the past century. Rising ocean temperatures and the consequent changes in climate, such as cycles of flooding and drought, have potentially dire consequences for even our food security (IPCC, 2019). We will also need newer varieties and practices to maintain yields in the face of increasing temperature, CO<sub>2</sub> levels, and water stress.

This calls for an urgent need to change agricultural practices to mitigate climate change, which is to reduce the extent of damage by reducing emissions and other such preventive actions. We also need to take adaptive measures to ensure that these inevitable changes will have as little impact as possible on farmers' harvest and their incomes.

## Water Stress

Agriculture accounts for 70 % of global freshwater use, even though 80 % of global agriculture is primarily rain-fed (FAO, 2011a). In the coming decades, the share of freshwater available for agriculture is likely to decline as a result of increasing demands from industry, power generation, and domestic use. Besides, competition between different agricultural uses, changing dietary patterns (e.g. the increased consumption of meat and sugar) will have a direct bearing on the availability of water for food production. In India, the overall efficiency of surface and groundwater irrigation ranges between 30-65 per cent and 65-75 per cent respectively. The annual rate of efficiency improvement in agricultural water use between 1990 and 2004 was approx. 1 % across both rain-fed and irrigated areas. At this rate, the sector will be able to close only 20 % of the projected demand-supply gap by 2030.

Improvements in supply will address only another 20% of the gap (WRG, 2009). Gaps between supply and demand are likely to be most pronounced, in a country like India

with high rates of economic growth coupled with high levels of poverty. Hence improved efficiency of water storage and management in agriculture can play a major role to minimize the demand-supply gap in irrigation in the coming future. Agricultural water productivity (crop yield per unit of actual evapo-transpiration) values for major crops have wide ranges amounting to 0.6-1.7 kg/m<sup>3</sup> for wheat, 0.6-1.6 kg/m<sup>3</sup> for rice and 1.2- 2.7 kg/m<sup>3</sup> for maize indicating 'tremendous opportunities for maintaining agricultural production with 20-40 per cent less water resources.

Other challenges include, labour availability for agriculture in India. In recent years; due to various reasons including increased urbanisation, industrialisation, and CoVID-19, there has been a significant reverse migration of agricultural labourers – for example labour migration from Punjab back to Bihar – forcing farmers to explore more efficient methods of crop cultivation.



## Opportunities

Topographically India is among the most bio-diverse countries in the world. The country encompasses various types of climatic conditions and soil types suitable for cultivation of large number of cereals, fruits, vegetables, flowers, cash crops, etc. Over half of the territory is used as crop land, making India one of the largest producing countries of agricultural commodities worldwide. In addition, India also represents the second largest fish producing country in the world. But as highlighted above, there are several bottlenecks especially for small and marginal farmers thereby leaving them with very few opportunities. Our agriculture strategy is to leverage these opportunities to address some of the big challenges.

### Scope for Improving Yields

While there are significant yield gaps for many crops in India; there are also large regional variations within the country. Punjab and Haryana exhibit high productivity nationally, while states such as Madhya Pradesh, Rajasthan, Maharashtra, Chhattisgarh, Odisha, and Karnataka suffer from quite low yields per hectare. The scope for improved productivity in these latter regions is substantial.

The eastern region too has huge scope for improvement due to its fertile land and abundant water resources. The existence of yield gaps can be explained by many factors, such as the prevalence of subsistence farming and poor access to chemical inputs, improved technology, and management techniques and irrigation coverage. The large majority of farmers in the country are yet to realize the gains from application of scientific tools and technologies. Hence, crop yields have a scope to improve by at least 40 to 70 percent for farmers with suitable interventions such improving management practices and adopting new crop varieties. By achieving higher productivity, land and resources can be freed to grow higher-value crops like fruits and vegetables, as well as livestock. On the demand side, in the coming decades, India's food production will need to be increased substantially to match the expected population growth (more than 1.6 billion in 2050 - UN-Pop, 2017) along with changing dietary preferences like a higher demand for animal-sourced products.

### Shifting towards Fruits, Vegetables and Pulses

Unlike the consumption of rice or wheat, which is linearly related to GDP, the consumption of F&V and pulses follows an S-curve relation to GDP. Over time, the Indian diet has seen a significant shift to higher protein intake. India is entering a hot zone in this space with projected demand growth at a CAGR of 8 to 11 percent. As per government report, a farmer can earn an additional Rs 80,000 per hectare (ha) if they replace staple crops with horticulture.

It has also projected an increase in demand for fruits and vegetables (F&V) between now and 2050 by 228 per cent and 95 per cent respectively.

### Leveraging Digital Technology

Another big opportunity is the leveraging of digital technology to improve existing extension and farm management models so that information can directly reach farmers. This also has immense scope to improve the well-being of farmers. In terms of digital innovation, India, like elsewhere in the world, has seen the mobile phone transform the lives of rural households. Twenty years ago, only 10 percent of the population had any kind of telecommunication. Now, we have close to 80 percent of households with access to a cell phone. Digitization and analytics can play a critical role in building India's future agriculture growth. Potential opportunities that could unlock value through the digital revolution are

- Transforming the extension system in the country by augmenting the existing manpower-based system with information and communication technology (ICT). With smart use of ICTs, we can drop the cost of the extension system and make it more efficient and effective. However, the need for scientists or advisors to engage with rural communities to provide hand holding support and mobilize them into groups to become more efficient collectives for a wide range of services
- Further, technology can support precision farming which includes integrating field data, forecasting weather patterns and helping with data-based decision making to support with yield forecasting among other inputs.
- Electronic applications can also add to efficient farm lending, disbursement of loans, insurance pay-outs linked to weather, field data and track 'Direct Benefits Transfer' in agriculture.
- Digital technology can also help to address the vacillating price deducing issue. The current wholesale market is not very transparent; and with no data on volumes, prevailing prices or inventory levels, there is little information for buyers or sellers to make informed decisions. This information gap is a barrier to the entry of new players and, hence, digitization in market can lead to increased competition and better price discovery

- Remote inaccessible areas are now opening up due to increased mobile penetration, e-commerce platforms, virtual aggregation and social media. This can help trigger an “Uberization” of the sector by bringing farmers in touch with profitable customers/ service providers/ sellers/ logistics players and help build sustainable partnerships to improve farming productivity

Training farmers to become digitally literate by creating awareness and making information available in vernacular languages will help to overcome the access challenges at farmers’ level. This will be a huge step forward since small farmers lack the literacy needed to operate e-portals that provide information about crop advisory, price movements and engage in e-commerce transactions with distant buyers.

### Farm Mechanization

Farm mechanization can help saving inputs by 15-20%, increase crop intensity by 5-20%, productivity by 30%; and it can also increase farm labour efficiency in addition to reducing the agriculture operation time by 15-20%. Farm mechanization is an important component to help improve farm productivity for small & marginal farmers in the country.

To optimise farm mechanization it needs to be addressed at four levels

- Educate farmers to enlarge their awareness about the availability and use of different implements
- Innovate custom-hiring service or an institutionalised rental model for high cost farm machinery such as combine harvester, paddy trans planter, rotavator etc. in order to reduce the cost of operation
- Given that 84% of the land holdings in India are below 1 ha, there is a need for developing and popularizing low cost and scale-appropriate solutions targeted at small farmers
- Encourage the “collectivization” of farms for effective use of farm equipment for crops diversification in small holdings.

### Crop Diversification

Crop diversification provides the farmers the opportunity to cultivate a variety of crops and also bring down the possible risk. Crop diversification is generally viewed as a shift from traditionally grown food crops to more remunerative crops like vegetables and other cash crops. National data shows that shifting one hectare area from staple crops to commercial high value crops like fruits and vegetables offers the potential to enhance economic

returns by 147 percent provided other challenges in production, supply chain and marketing are addressed. Crop diversification is also advocated to promote more nutritious and varied food supply and it increases the access to more affordable and healthier food to fight malnutrition. Further, it is a recommended practice in dry-land areas to reduce the risk factor of crop failures due to recurring droughts. Objectives like natural resources sustainability, ecological balance, output growth, risk coverage can be attained by following crop diversification which aims to increase total productivity in terms of quality, quantity and monetary value under specific, diverse agro-climatic situations in the country

Some key factors to encourage small farmers to implement crop diversification include (a) improved rural infrastructure including irrigation, extension, provision of agricultural inputs and strengthened value chain which includes readily available market for crops and marketing support etc. (b) Factors related to household improvement and reach like food and fodder self-sufficiency, availability of family labour as well as affordability in terms of investment capacity. (c) Location specific approaches are going to be a key to crop diversification among the small farmers.

### Shift from Supply Driven to Demand Driven

Small farmers are increasingly getting influenced more and more by economic factors like income and profitability. This is not surprising because irrigation expansion, infrastructure development, penetration of rural markets, development and spread of short duration and drought-resistant crop technologies have all contributed to minimizing the role of non-economic factors in crop choice of small farmers.

Given the population surge and the changes in consumer food habits, farmers are trying to include or substitute additional high-value crops. This tilt towards increased profitability in crop choices can also pave the way for the next stage of agricultural revolution where growth originates more and more from value-added production.

If the transition from production-centric to market-centric thrives then agriculture will be attractive because of the steep increase in income for about 50% of population for whom this is the primary, if not an important additional source of livelihood.

## Minimizing Supply Chain Wastage

Around 60 percent of food loss and waste in India happens between the field and the end-consumer, and this is concentrated in a few crops especially F&V and cereals. Several challenges limit cold chain penetration and adoption—high cost of stable power supply, low capacity utilization, and limited post production finances options for warehouse, cold chain etc. These challenges offer a significant opportunity to improve farmer incomes by addressing the storage and handling of food as well as creating improved market linkages to customers.

## Contract Farming

The introduction of contract farming is another big opportunity for small farmers to improve their income. Contract farming can enable private sector investment in agriculture and can provide more exposure to world class technologies. It can vertically integrate the supply chain of high-value cash crops and such vertical integration allows end-users to upgrade and coordinate varieties planted by farmers with those that customers demand and meet safety and quality standards. End-users can additionally provide credit and transfer risk from farmers, and invest in modern transport and storage facilities. Contract farming has emerged in production of potatoes, poultry and a few other horticulture products in some states that have permitted and promoted them, with encouraging results for growth of output, export and farmer incomes.

There is also great opportunity in linking community farming with contract farming whereby farmers will have enhanced clout for collective negotiation thereby minimizing exploitation by opportunistic private players. It will also give farmers the bargaining power with the private players.

But contract farming also raises a variety of regulatory challenges ranging from scope for opportunistic and possibly exploitative behaviour by buyers apart from the possibility of recurring defaults by farmers. Hence, contract farming can be a good opportunity where farmers are doing a high value cash crop but where local agri-markets are not competitive or are less favourable for farmers. It will be therefore important to ensure regulations and their proper implementation, the balancing of demand-supply for the crops, a stabilized market price and other fall-back options for the farmers are monitored for contract farming to be widely adopted by farmers and farmer groups.

## Emergence of Modern Retail

The emergence of modern retail is emerging as an important catalyst for the agriculture industry and is a big leap towards transparent and competitive market

eco-system. Modern retail can help elimination of middle men from the distribution chain, thereby providing better remuneration to the farmers in comparison to small-scale local vegetables markets. This system ensures the regular pick up of supplies thereby assuring regular income, reduction of wastage and eliminating transportation costs for farmers and providing fresh supplies of food items to the consumers.

However, direct purchase by organised retailers is limited to only high end quality (referred to as Quality A and B) unlike Mandis which bought the entire produce. Despite this, modern rural retail and wholesale markets that are efficient, professionally managed and responsive to the farmer's needs, will be able to provide them with appropriate help to choose crops that are in demand and fetch them higher prices.

## Fostering Linkages with Government

Government support plays a vital role in the growth of the Indian agriculture sector as agriculture remains a primary means of livelihood for more than 50% of the India's total population and as such represents the most important sector for any government. In a significant shift, the government's focus is moving from increasing farm output to improving farmer incomes (it has set an aspiration to double farmers' incomes by 2022) and this will enhance productivity and have multiplier effects on the larger ecosystem. We will focus on establishing linkages so that the small and marginalised farmer can tap into these opportunities.

## Rich Ecosystem of Stakeholders

Several local/ national/ international organizations/ start-ups/ private input players and NGOs currently work with farmers and other members of the agriculture supply chain to solve the challenges they face. This extensive ecosystem has been working on farmer issues for a long time and they have created an incredible body of work. A number of professionals with wide expertise provide an important role to support small farmers and some of the strategies they expound on include

- Crop improvement research and extension
- Specific agricultural technologies and inputs.
- Resilience to climate change
- Weather advisory and protection
- Irrigation
- Financial services
- Supply chain solutions
- Provision of extension services
- Creating and nurturing farmer collectives and youth
- Investing in solutions with potential

The box below is a collation of the challenges and opportunities faced by the Indian farmer and provides the context for DRF's strategy paper for well-being of small & marginal farmers



# DRF's Strategy

To Improve Small & Marginal Farmers' Well-being

**"No race can prosper till it learns there is as much dignity in tilling a field as in writing a poem"-**

Booker T. Washington

The well-being of small & marginal farmers directly translates to the well-being of nearly half of the Indian population. More Indians depend directly or indirectly on agriculture for employment than on any other sector. Eighty percent of India's extremely poor people live in rural areas and most of those are marginal farmers, farm laborers and their families. Hence it's imperative to improve the well-being of farmers to ensure progress and prosperity.

Against the background of all the challenges and opportunities discussed above, DRF has developed its agriculture strategy focused exclusively on the well-being of small and marginal farmers. The purpose of the strategy is to enhance DRF's contribution to the national priority of improving the returns from agriculture and allied activities and also to help [a]guide its future work with small & marginal farmers and promote improved opportunities for rural livelihoods [b] sharpen its current programs and approaches [c] respond to emerging opportunities and future needs; and [d] to align better with the priorities of its stakeholders and the larger ecosystem.

The strategy has considered various variables and complexities associated with small & marginal farmers like their literacy levels, bargaining capacity, risk tolerance, exposure to new innovations, decision making matrices and community's influence on them. The strategy is built around seven strategic principles, which guide the strategic priorities and all operations will be pivot on these strategic components.

To summarize, this strategy focuses on 'improving the well-

being of small & marginal farmers by connecting them to eco system and guiding them to make informed decisions'.

To ensure we do not miss the relevance of this effort, it is perhaps pertinent to underline that all the 17 Sustainable Development Goals (SDGs) adopted by the UN - which is now the accepted template for development - can be linked to farmers directly or indirectly. Therefore, reaching these SDG targets will not be possible without the inclusion of farmers. DRF envisions that this strategy will help our efforts to contribute especially to SDG goal #2: "end hunger, achieve food security and improved nutrition and promote sustainable agriculture" and through this strategy, help renew our commitment to support farmers and ensure they are not left behind.

## Strategic Principles

All our work for wellbeing of small & marginal farmers will be guided by the following principles (Figure 1).

### Keeping Farmers at the Core

Promoting any intervention to improve farmers' income and well-being must be farmer-centered and expanded through participatory approach. DRF will focus on building solutions with farmers at the center. Any solution that is introduced will be based and validated by the farmers. In brief, farmer participation will be integral to the end -to-end process.



Data driven  
M&E



Design  
thinking &  
MVP  
approach



Leverage  
existing  
resource/  
solution



Strengthen linkage  
between community  
& formal private  
sector players



Farmers at  
core



Complement  
existing  
agri-extension



Feasible  
Technology

## Complementing Existing Agriextension Systems

DRF will work on solutions that complement existing systems (government, or private) to improve their reach and effectiveness. DRF believes in making farmers influential and responsible clients rather than passive beneficiaries to ensure sustainability.

Participatory methods like farmer-to-farmer extension will increase farmer ownership of the technologies that are effective. To ensure sustained and improved impact of the local extension machinery by the government / private players, co-creation and co-ownership will be crucial.

Since government extension workers are few in number, we will prioritize on encouraging local communities to proactively participate by selecting a "lead farmer" to stand-in as the "local extension agent" from the community; which for the sake of clarity, needs to be emphasized is not a parallel extension system, but one that supplements/complements the existing system in order to improve the effectiveness of all stakeholders and encourage farmers to "own" the last-mile changes. In short, DRF endeavours to build a bridge between the community and the extension machinery through its efforts.

## Feasible Technologies

The main factors in deciding the suitability of any technology is the ease of implementation, its economic viability, local relevance and the availability of a support system. DRF identifies and implements technologies which will pass these checks. Technologies that are implementable at scale, requires minimum change at the farmer level and is net positive for the farmer will be prioritized for implementing at scale.

## Community - Private Sector Linkage

DRF will work with private sector partners, including start-ups, or established companies if they add value either in one of the key focus areas or extend end-to-end support in the value chain for the farmers. Companies will be on-boarded to participate and be stakeholders in the community platforms nurtured by our efforts.

Such collaborations will help the community to leverage the value offered by the organization while simultaneously helping the organization to expand their business/outreach Community/ individual ownership of franchisees, distributorships etc. our programs will ensure a continued

symbiotic relationship between the community and private sector and focus on strengthening the farmers' skills to achieve self-reliance by opting to endorse Community organisations/ farmers' collectives so that they can gain from these linkages.

Further, the focal role of our work will be to create a fall back option for farmers in case of any set-backs during the transition phase and enable farmers to independently steer a way forward in the ecosystem.

## Leverage Existing Resources

Since no one group or organisation can address the complex and multi-disciplinary issues of agriculture sector, DRF supports collective problem inquiry and strategic collaborations to avoid reinventing the wheel and save time and valuable resources. We will partner with organizations/ resource agencies recognized for their expertise and further leverage their expertise/skill, under a "knowledge partnership" agreement to save time and resources.

Our programs will aim to be the platform to bring communities and stakeholders together to multiply impact. Our priority areas include Research & Development, Irrigation, Post-harvest value addition, and collectivization.

## Design Thinking and Minimum Viable Product (MVP) Approach

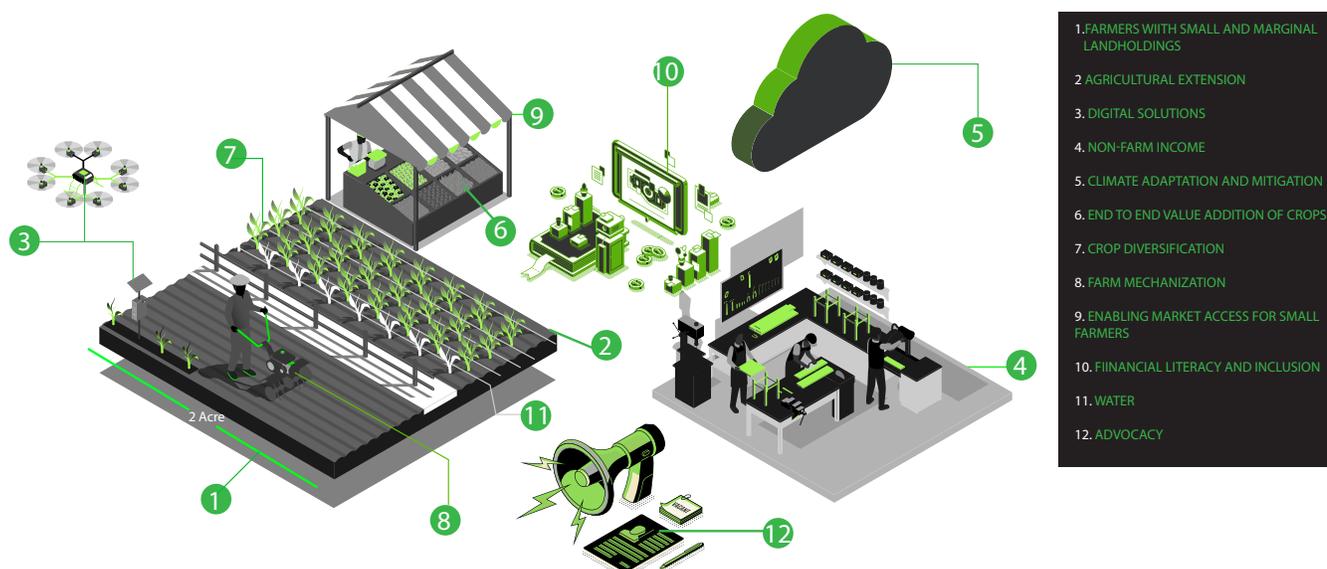
While DRF is open to experiments and new opportunities, the template for all new interventions and pilots will be based on collective problem inquiry, pressure test new ideas and apply the minimum viable product approach to design solutions.

## Data Driven Monitoring & Evaluation

DRF will use result-based management for effective execution and monitoring of our programs. The team will rigorously measure and evaluate program outcomes and practice data-based decision making; in addition to using a combination of result monitoring, process or activities monitoring, beneficiary monitoring as part of the monitoring framework.

While this is already integrated, we will strengthen it further by leveraging new technologies like GIS based crop growth mapping etc.

# Strategic Priorities



## Farmers with Small and Marginal Landholdings

DRF will prioritize the wellbeing of farmers with small and marginal landholdings. All interventions will be designed to be effective in small- holdings. We will also include non-farm aspects of wellbeing such as insurance, employability, skilling, off-farm sectors like dairying fishing or poultry etc.

## Agriculture Extension

Agriculture extension services have a huge scope to improve farmer's income, impact the climate change and ensure food security for the farmers. We will continue to support agriculture extension services as a key strategic priority to improve the well-being of the farmers. We will continue to work with government, private and digital extension systems to make farmers better aware of the practices they need to follow, seek timely advice and get market and weather info to make informed decisions and reduce the risks.

## Digital Solutions

We believes digital solutions can make small & marginal

farmers more productive by accessing advisory services, weather updates, market information etc. in order to make independent decisions especially at crucial stages without needing to reach out to public extension system physically. These digital solutions are gradually becoming the new alternative to improve the effectiveness of the public extension system at a much lower cost. Hence we will work with partners to promote digital solutions like mobile apps, WhatsApp, IVRS and SMS services to enable small & marginal farmers have a choice to access either manual extension services or digital advisory or both.

## Non-farm Income

DRF will focus on relevant non-farm interventions for small & marginal farmers including landless farmers to improve their economic wellbeing and risk-taking ability. Non-farm opportunities are important levers to improve the productivity of farmer households and also reduce the over dependency on the land by the farmers. As part of non-farm interventions, we will develop scalable rural entrepreneurship and wage employment models which can help the farmers to have additional and regular income.

## Climate Adaptation and Mitigation

There is an urgent need to equip and prepare small & marginal farmers to the threats posed by climate change both on a short term and long term basis. We will continue to promote proven climate responsive practices, risk mitigation measures and help the farmers' access new technologies and solutions to make them more resilient to the climate change impacts. We view preparing farmers for climate change effects as a crucial input for their well-being.

## End-to-End Crop Value-Addition

We will focus on end-to-end value-addition by starting with the 'inputs-to-extension' phase to the 'access-to-market' stage especially when there is potential for improved returns and impact-at-scale. These interventions will be done when the farmers are already into the cultivation of specific crops and there is scope for value addition across the value chain. Such interventions will help farmers to improve the results like output, cost of cultivation and market access thereby earning better returns from the crop. We will also assess the comparative advantage for farmers and the eco system when pushing for specific crops or promoting crop diversification to ensure there is a fair balancing of the economic and ecological value creation.

## Enabling Market Access

Small farmers are increasingly getting influenced by economic factors. This change is leading to a shift from a production-centric mindset to a market-centric mindset. We have been able to identify this potential by giving farmers direct market access. This will help the farmers to stay connected with the market dynamics and demands.

To reap the full benefit from these program interventions we intend to

guide farmers about the type of crop to be grown, investment to be made and calculate the returns they will get as net profit. The focus will be on how to reduce cost of cultivation, increase productivity and how to capture better prices in the market. Further, we will support farmers with market intelligence and help them follow right practices apart from guiding them to take informed decisions through our engagement with them. We foresee this approach has a huge opportunity to bring holistic value for the farmers.

## Crop Diversification

The priority under the crop diversification has four components. (a) Supporting crop substitutions by growing remunerative cash crops like vegetables or less water consuming crops (b) Promoting inter-cropping. (c) Crop rotation and (d) Encouraging nutrition sensitive agriculture practices. The above first three components can help farmers to reduce the risk from the crop failure and also improve the returns. The nutrition sensitive agriculture practices are aimed at producing nutritious food and also to improve the consumption of nutritious food at a household level. We will adopt location specific strategies by considering macro level factors like extension support, market support and inputs availability along with irrigation as well as micro level factors like influence of food and fodder self-sufficiency, farm size, and investment constraints of small farmers in designing the location and include individual farmer specific strategy. We see diversification has a significant opportunity for realizing higher output growth, higher farm income, sustainability of natural resources, and adoption of nutrition sensitive agriculture practices by small farmers.

## Farm Mechanization

Farm mechanization plans include two components (a) Identify and introduce existing low cost solutions to farmers to help reduce the cost of cultivation and increase the output. It can include either owning the implements or availing the implement from the service provider. (b) Make farmers access implements through promoting custom-hiring centers owned by individuals on an enterprise model. We also see an opportunity to connect the farmers to service providers through an "Uberisation" model.

## Financial Literacy & Inclusion:

Access to finance to make the necessary investments for new practices/ technologies is necessary for small farmers to improve their farming outcomes. Financial literacy and inclusion priority will have three components (a) Access to different institutional loan products through awareness and connecting the farmers to the financial institutions to help them get the liquidity and credit access. (b) Making farmers financially literate so that they adopt the right practices in managing their financial transactions. This includes safe banking, digital banking, loan repayment and credit access and (c) Nudging farmers to move up the ladder to adopt risk mitigation practices like crop insurance, health insurance and life insurance.

## Water Usage

Due to population growth and increased urbanization, competition for water resources is expected to increase, which will substantially impact the agriculture sector. It is estimated that the demand on water by all sectors will require as much as 25 to 40% of water to be re-allocated from agriculture sector due to its high share of water use. The other challenge farmers will have to confront is from climate change induced change in rainfall patterns and water scarcity due to depletion of ground water resources. Hence, there is a pressing need to improve water use efficiency and water delivery systems among the farmers especially at the small & marginal farmer level. Considering the relevance and sheer impact of water for small & marginal farmers we will focus on water intervention by (a) Working on access to water which includes ground water where ground water sources are abundant in an efficient manner. In addition promote rain water harvesting and other proven technologies along with rain fed cultivation as one of the sub components. (b)Emphasize on crop-water management which includes crop planning, adopting water-saving crop establishment methods (egg directly seeded rice), crop rotation, crop substitution, soil moisture retention and management and adoption of other appropriate water management practices. (c)Promote water efficient infrastructure such as micro irrigation. Since water usage is key to making farmers resilient to climate change our programs will also focus on use of advanced technologies (i.e. soil moisture sensors, other digital solutions) in water management that are suitable for small & marginal farmers to help them improve their efficiency and productivity in their farming outcomes.

## Advocacy & Communication

Communicating and advocating to the ecosystem including government and the community is the key to ensuring equity and bridging knowledge gaps. Our strategy includes developing awareness about farmers' wellbeing by maximizing the utilization of the community volunteer platform apart from using social media etc. to spread information and also reach out to even those farmers who are not in our project area.

## What we will not do?

Since DRF's expertise and experience is centered on program execution and solving social problems, we would like to enunciate here that we will be limiting our work within these parameters and hence we will not

- Focus on Research and Development
- Include programs which lean towards infrastructure development; as we perceive they will pose challenges for us in terms of quick scaling up
- Undertake any activity related to agriculture input manufacturing or supply; food processing activities, financial services delivery or certification and branding of agriculture products.
- Support activities that cannot exhibited, validated or pose limitations in terms of adaptability and scale-up
- Implement any program that pivots towards a supercilious "charity model" for small & marginal farmers.



# Strategic Components

Our agriculture strategy includes the following components which have been outlined based on the present challenges faced by the small and marginal farmers and some persisting bottlenecks to leverage the delivery model in the eco system.

SC01 - outlines our present strategy and what we are currently doing and will continue to do.

SC02 - is indicative of the component where we are engaged on a small scale but will be doing differently to up-scale.

SC03- highlights the new areas which we plan to start this year



- Community Platform to deliver extension services
- Addressing risks faced by farmers
- Increasing adoption of Technology
- Facilitating sources for additional income



- Ensuring access to quality inputs
- Ensuring market access for outputs
- Alligning farmers crop choices with market demand



- Reducing the use of chemical fertilizers and pesticides
- Promotion of water and soil conservation practices
- Ensuring access to varieties that are tolerant to stress
- Using agro-forestry

## Strategic Component 01(SC01):

### Strengthening of Farmers through improved extension, risk mitigation and non-farm income

#### Objective:

To enable the farmers to improve their practices and access to information so that they can produce what the market needs and also get additional income to reduce dependence on agriculture and achieve financial stability. Following are the sub components which we will focus to achieve the objective.

#### Community Platform to deliver Extension Services

A key priority will be to develop and nurture a platform of community volunteers for the delivery of last-mile extension services, acting as force multipliers for the government extension professionals. Passionate farmers with a will to bring change to their community will be identified and nurtured by using a participatory method. They will bridge the last-mile extension gap.

#### Addressing the Risks faced by Farmers

Agriculture is one of the few production sectors where the highest risk is borne by the primary producer in return for a very small portion of the buyer's rupee. Below is the matrix of causes and proposed solutions

Causes	Proposed Solutions
<ul style="list-style-type: none"> <li>Disorganised Markets</li> <li>Consequent disconnect between farmer and consumer</li> </ul>	<ul style="list-style-type: none"> <li>Forward linkages at the high end of the value chain, such as linking farmers with the market and consumers and collective- based direct marketing</li> </ul>
<ul style="list-style-type: none"> <li>Lack of demand-based production planning</li> </ul>	<p>Training on farm level production planning for high value crops.</p> <p>Tracking consumer's preference with real time data collection to help understand the demand better and educate farmers accordingly.</p> <p>Piloting periodic supply contracts</p>
<ul style="list-style-type: none"> <li>Selling at harvest, when the prices are normally lowest</li> </ul>	<ul style="list-style-type: none"> <li>Facilitating storage of crop till market prices are favourable by using warehouse receipt financing and micro- financing.</li> <li>Staggering production based on feedback from market and consumers so that the farmers have produce only when the market would be able to absorb at a good price.</li> <li>Assured linkage to the transport/delivery partners</li> </ul>
<ul style="list-style-type: none"> <li>Value reduction of high value crops due to improper storage and handling</li> </ul>	<p>Facilitating affordable cold storage technologies and training on suitable handling for high value crops such as</p>

## Increasing Adoption of Technology

Adoption of technology in Indian agriculture is long overdue and very important, for two key reasons. Firstly, the cost of labor is not economically viable and therefore labor reducing technologies are needed. Secondly, technology helps increase productivity and thus there is value creation for the farmer.

Since there are many players working on these technologies DRF will work with research organizations, startups and other relevant stakeholders to identify and bring in as many relevant technologies as possible to be piloted by farmers who can provide feedback and contribute to the product development cycles. At the same time, we will look into providing alternative livelihood source for the landless that are working as agriculture laborers and ensure that technology adoption does not become counterproductive to the local livelihood system.

## Facilitating Sources for Additional Income

Agricultural households need increased incomes, and while improved agricultural practices will increase farm incomes, it is also necessary to facilitate the creation and improvement of sources of non-farm income, such as employment and micro- enterprises. Together with increased farm incomes, this will help truly double farmer incomes sustainably.

### Execution Plan for the Implementation of the Above Components:

1. District/ Block Model of Lead Farmers platform for delivering the extension services through the community platform. This model is already being implemented in the states of AP, Telangana, UP and Bihar.

2. Integrated model of farm and non-farm interventions in the cluster approach which aims at wage employment and self-employment in the non-farm sector and also focuses on crop and livestock interventions for farmers. This model is currently operational in district model at Samastipur, Bihar and the project template is ready for scale-up to other states with interested partners.



## Strategic Component 02 (SC02)

### Improving Access to Market for farmers for better returns

#### Objective:

To enable farmers to access the market - both for inputs and outputs - and increase production efficiency by leveraging market platforms effectively. The following sub components will enable farmers to gain favourable access to markets

#### Access to Quality Inputs

Once the farmer has access to extension services and is exposed to the right practices and technology, he will need to have access to the inputs required to follow those practices. We plan to work with private players to establish linkages between farmers and the players, so as to ensure reliable access to quality, affordable inputs. To establish such linkages, the following four models (based on the context) will all be used

- The Entrepreneur-Franchisee model where a local entrepreneur acts as a franchisee for a larger player.
- The Collective Model where a farmer collective buys inputs in bulk from companies.
- The B2C Model where technology platforms enable individual farmers to buy from players higher up in the supply chain.
- Promoting Seed Production for some crops through selected farmers and connecting fellow farmers to the local seed producers.

#### Market Access for Outputs

We will work to improve market access for small and marginal farmers, whether through direct marketing companies setting up franchisees, or through farmer collectives. We will work with experts to empower farmers with information on market trends and prices, as well as provide them access to platforms where farmers can access a multitude of buyers as well as ensure secured transactions. To empower farmers to utilize access to such platforms, we will

- Ensure access to information on market dynamics and seasonality of demand
- Provide exposure to certification requirements of different kinds of buyers

- Promote of residue free cultivation where the market incentivizes it.
- Facilitate Forward Linkages to markets in Indian metropolitan cities.

#### Execution Plan for the Implementation of the above components

1. Promotion of village level entrepreneurs and digital market place platforms. This is already being implemented in the district model of Lead Farmers platform at Samastipur, Bihar.
2. Facilitation of contract farming model between market players and farmers through community platform.
3. End-to-end value addition model. This is operationalized for selected crops like potato and turmeric. Two more crops are also in the design phase.

### Strategic Component 03 (SC03):

#### Making farmers resilient to the impact of climate change.

##### Objective:

To make small & marginal farmers resilient to the climate change effects by adopting effective mitigation and adaptation practices. The following sub-components will be integrated

##### Reduction of Chemical Fertilizers

While the indiscriminate use of chemical fertilizers is dangerous to the environment, organic agriculture cannot yet provide food security for the burgeoning population of the world. The alternative is to reduce the use of chemical fertilizers to the extent possible, and to eliminate excessive usage. There is also an urgent need for exploring emerging technologies that can make organic agriculture more viable. Therefore, the following will be promoted

- Scientific Nutrition Management based on soil testing
- Bio Fertilizers that utilize micro-organisms to improve soil fertility
- Improved delivery mechanisms to improve efficiency and efficacy of chemical fertilizers to reduce the quantity required.
- Encourage natural farming/ low input intensive agriculture

##### Reduction of Chemical Pesticides

It is estimated that over two lakh people die every year due to exposure to pesticides, whether directly or through harmful residues on the agricultural produce consumed. Pesticides also upset the balance of the natural ecosystem, leaving many beneficial organisms functionally extinct. However, pest control is critical, as we already lose about 40% of produce to pests. In order to reduce the consumption of chemical pesticides while minimizing crop damage due to pest attacks, the following will be promoted

- Integrated Pest Management to reduce pest incidence and identify it promptly
- Biological Pest control through agents such as parasites, predators, fungi, and natural inputs.
- Improved delivery mechanisms to improve efficacy of the chemical pesticides and to reduce their spread in the ecosystem.

- Promoting safe use of practices among the farmers

##### Promotion of Water Conservation

In a water stressed future, the judicious use of this precious resource will be of critical importance. We will work to reduce water consumption by

- Promoting Less Water intensive crops where possible
- Promoting Micro Irrigation
- Promoting water saving practices such as zero tillage and direct seeding

##### Promotion of Soil Conservation

By restoring degraded soils and adopting soil conservation practices, there is major potential to decrease the emission of greenhouse gases from agriculture, enhance carbon sequestration and build resilience to climate change and help climate change mitigation. We will work to improve the soil conservation by

- Promoting conservative agriculture practices among the farmers in certain crops like maize, wheat; rice-wheat crop cycle at scale
- Other practices like "Perimeter runoff "control, Windbreaks and Cover crops/crop rotation, Salinity management will be taken up at individual farmer level considering the economic factors of the farmer.

##### Access to Stress Tolerant Varieties

Climate-resilient crops and crop varieties increase farmers' resilience to climate change. Adoption of climate-resilient crops, such as early-maturing cereal crop varieties, heat-tolerant varieties, drought-tolerant legumes or tuber crops, crops or varieties with enhanced salinity tolerance, or rice with submergence tolerance, can help farmers to better cope with climate shock. Interestingly, while stress tolerant varieties can help cope with increased temperatures, drought and salinity, such varieties can also deliver co-benefits for nutrition, pest and disease tolerance, and help reclaim salinized land (in the case of rice). We will work to help farmers to adopt stress tolerant crops/ varieties by

- Building awareness of climate change and adaptation measures
- Enabling farmers' access to inputs, especially seeds and fertilizers so that they adopt stress tolerant varieties/ crops.

## Using Agro-forestry

Appropriately managed tree shade over crops reduces ambient temperature by typically around 2°C leading to higher yields of staple food crops by reducing heat stress and extending the grain filling period. Shade also reduces bare soil evaporation and improves the water use efficiency of crops, making better use of water during drought periods. In many circumstances trees increase water infiltration, reducing soil erosion and flood risk. Trees on farms further low carbon development pathways by increasing carbon storage in biomass vegetation in soils. We are going to promote agro forestry with farmers by implementing

- Promote Crop cover practices among farmers
- Implement the afforestation activities in the barren lands through community participation

### Execution Plan for the Implementation of the above Components

1. Climate smart agriculture project is implemented in two blocks one each in Telangana and Andhra Pradesh
2. Promotion of conservative agriculture and natural farming is in progress in District model of lead farmers' platform.
3. Technology enabled land and water management along with crop water management practices are



## Partnerships

We recognize that the execution of this strategy will only be possible with support of current as well potential future partners and stakeholders. Till date, our partners which include Government, Corporate CSRs, Foundations, Research organizations and NGOs have played a critical role in shaping our work with small & marginal farmers and have helped us in maximizing our impact at community and system level. We strongly believe that the proposed strategy will help us to [a] strengthen our collaboration with current partners and help in developing new partnerships [b] strengthen our work with the government at state and national level which will enable us to contribute to policies, plans and schemes for small & marginal farmers [c] collaborate with international bodies and multi-lateral organizations for promoting innovations and practices which are going to improve outcomes for the farmers [d] establish partnerships with expert agencies for leveraging their technical support/ solutions in connecting to farmers [e] partner with private players/ agro start-ups in the eco system to enable farmers to access inputs and market their produce.

## Conclusion

We envision that our strategy for improving the well-being of small & marginal farmers will guide our work in contributing to system reforms and system strengthening through evidence-based advocacy and need-based technical assistance, knowledge sharing as well as knowledge partnerships.

We are optimistic that we will impact one million small & marginal farmers by equipping them with better practices in crop, non-farm activities, access to market and climate change mitigation and adaptation so that they meaningfully participate in the future prosperity of the country. The strategy includes a mid-term strategy review (2023) aligned to our M&E approach, to review [a] the progress made towards the purpose of the strategy [b] to take stock of ecosystem changes and its impact on our work and strategy [c] to incorporate new learnings from our work.

Thank you for your interest and support.



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