



06.20



INDIAN AGRICULTURE: POLICIES FOR SUSTAINABLE TRANSFORMATION

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ISSUE BRIEF 2

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ABSTRACT

Sustainability has become the central concern in agricultural systems in India, as farmers, mostly small and marginal, are grappling with the environmental impact of chemical-intensive farming, declining farm incomes, as well as adverse impacts of climate change on crop yields. This issue brief, the second in SPRF's series on Indian agriculture, analyses the policy responses since 2014 to concerns regarding sustainability of farm incomes, crop yields, and current agricultural practices. It also briefly looks at the effects of the COVID-19 lockdown on the agricultural supply chain and the efficacy of the government's response to offset these effects.

CONTEXT

The first in the series of issue briefs on Indian agriculture deliberated why sustainability has become the central concern in agricultural systems across the world. It was observed that this concern is more pronounced in countries like India where small and marginal farmers grapple with rising input costs and debts, increasing water scarcity amidst the dominance of water-intensive crops like rice and sugarcane, land degradation, and progressively frequent climate disasters like floods and droughts. The issue of sustainability in Indian agriculture was analysed by trifurcating it into the following dimensions - the ecological impact of agricultural practices, low farmer incomes, and the threat of climate change on crop yields (Bisht 2019). Since the last brief was published, the world has been facing the COVID-19 pandemic. Inevitably, crop production, agricultural supply chains, and farmers' incomes have suffered across the world, including in India. Beyond the immediate challenges and policy responses, there is a need to understand what will entail for agriculture in the country in a post-COVID world, and reorient agricultural policies to build resilience.

This issue brief picks up from the last and attempts to evaluate India's recent (mostly post-2014) policy responses to the problem of sustainability in agriculture. It primarily analyses central government policies on agriculture aimed at improving farmer incomes, limiting the impact of agriculture on the environment and making farming climate-adaptive. Additionally, it attempts to list some key effects of the pandemic on agricultural systems in India and how effective policymaking can help agriculture be resilient to such shocks in the future.

| AGRICULTURE POLICY MAKING IN INDIA

Agriculture is a state subject under the Indian constitution. This means that even though the central government steers the overall approach in agricultural policies and, crucially, disburses funds for their state-level implementation, states have the responsibility and the right to implement agricultural schemes tailored to their context. States may choose to implement central government schemes partially or not at all. This is a reasonable framework considering the diverse ecological regions in the country that would require interventions suited to the local conditions instead of one-size-fits-all policies. Thus, to a large extent, the success of policy interventions in agriculture depends on how states choose to implement central sector policies and their own plans. It is essential to note this at the outset because growth in agriculture and the fortunes of India's farmers depend on the spirit of cooperation between the various states and central government. Interestingly, cooperation has been a key area of concern as there is a need for a robust mechanism that can bring policymakers from the centre and state levels to evaluate existing policy challenges and come up with possible solutions (OECD-ICRIER 2018: 29).

As per central government sources, in recent years, there has been a shift in focus from what could be called a production-centred approach in agriculture to an income-centred approach (MoAFW 2019). India's agricultural policy making has been production-centred since the days of the green revolution in the 1960s, which was primarily focused on increasing crop production, particularly cereals, to feed the country's ever-increasing population. Going beyond achieving annual crop production targets, the income-centred approach aims to "achieve high productivity, reduced cost of cultivation and remunerative price on the produce, with a view to earn higher profits from farming" (ibid). While that has been the stated goal of the new dispensation, how much of that has translated into ground-level impact remains to be seen. The following sections attempt to assess the performance of some of the flagship schemes aimed at addressing sustainability issues in agriculture under the Modi government.

| NATIONAL MISSION FOR SUSTAINABLE AGRICULTURE (NMSA)

NMSA was first envisaged as one of the eight missions outlined under the National Action Plan on Climate Change (NAPCC) proposed in 2008. It is the flagship central government policy that aims to make agriculture sustainable in a comprehensive manner. As a programmatic intervention since 2014-15, the mission aims at,

"making agriculture more productive, sustainable, and remunerative and climate resilient by promoting location specific integrated/composite farming systems; soil and moisture conservation measures; comprehensive soil health management; efficient water management practices and mainstreaming rainfed technologies" (MoAFW 2019: 101).

Thus, the mission encompasses all three dimensions of sustainability mentioned earlier. The centrally sponsored schemes under the mission are:

1. RAINFED AREA DEVELOPMENT

The scheme promotes integrated farming systems involving mixed cropping practices along with horticulture, livestock, fisheries, etc. in rainfed regions of the country to improve farmer incomes and mitigate impacts of extreme weather events like floods and drought. The significance of the scheme can be gauged by the fact that out of the 140.1 million hectare (mha) cultivated land under food grain production, 68.3 mha is irrigated, while the remaining 71.7 mha is rainfed. Rainfed regions lack irrigation infrastructure and are characterised by low productivity, low farmer incomes and high risk of extreme weather conditions. Looking at the coverage target and financial allocation for the scheme over the years, it is clear that the scheme consistently falls short in achieving the set targets.

TABLE 1: TARGETS AND ACHIEVEMENTS UNDER RAD SCHEME

Year	Coverage under Integrated Farming System (in Hectare)		Expenditure (in Crore INR)	
	Target	Achieved	Target	Achieved
2015-16	42,380.6	35,543.1	152.2	123.5
2016-17	55,833.5	40,961.5	200.8	147
2017-18	72,518.3	50,075.8	270.1	180.2
2018-19	99,346.5	69,988.8	281.1	183.4
2019-20	50,114.6	45,270.5	191.1	66.6

SOURCE: NMSA (N.D.)

2. SUB-MISSION ON AGROFORESTRY (SMAF)

Launched in 2016 following the adoption of the National Agroforestry Policy, this mission aims to increase tree plantation in an integrated manner with crop production (MoAFW 2016). Agroforestry involves growing fruit-bearing or timber trees on the periphery of farms and is considered a climate-adaptive alternative to conventional agriculture. The practice has implications for improving soil health and increasing farmer incomes in the long-run. It is considered particularly beneficial to the income generation capacity of marginal and small farmers across India. The intended increase in tree cover also ties in with India's nationally determined contribution for creating an additional 2.5-3 billion tonne carbon sink by improving tree cover under the Paris agreement. A tertiary look at the data on area covered and trees planted under the scheme over the last four years reveals that the plantation coverage has gone down substantially in 2019-20, despite seeing a consistent increase during 2016-2019.

TABLE 2: ANNUAL AREA COVERED AND TREES PLANTED UNDER SMAF

Year	Area covered (hectare)	Trees Planted
2016-17	373	4,63,159
2017-18	2,273	34,73,699
2018-19	2,819	19,37,075
2019-20	774	2,60,056

SOURCE: NMSA (N.D.)

3. SOIL HEALTH MANAGEMENT

This crucial scheme is aimed at “promoting location as well as crop specific sustainable soil health management, creating and linking soil fertility maps with macro-micro nutrient management, judicious application of fertilizers and organic farming practices” (MoAFW 2017: 7). The flagship policy under this scheme is the Soil Health Card scheme (SHC) launched in 2015. The SHCs, distributed every 3 years to farmers, inform them about the status of nutrients on their land, the appropriate crops they should choose for the crop cycle and the right nutrient dosage needed for enhancing soil fertility. The rationale of the scheme is that if the farmer knows what to grow and how to improve the soil health, he spends considerably less on inputs, sees increased production and has a decreased chance of incurring losses. Additionally, soil nutrients and organic content improves over time with this practice.

During the first cycle of the scheme (2015-17), 107.3 million farmers received SHCs (Soil Health Card n.d.). For the second phase, the scheme targeted distribution of SHCs to all 120 million farm holdings of the country (PIB 2017). Against this target, 115.1 million SHCs have been distributed till date (Soil Health Card n.d.). It has been reported that as a result of the recommendations under the scheme, farmers have been able to save 8-10% on fertilizers and get an increase of 5-6% in crop yields (PIB 2018). According to an impact assessment study of the SHC scheme, 66% of farmers are able to understand the content of the SHC, however, there is room for improvement in the participation of farmers in meetings and exposure visits (Reddy 2017b). Additionally, the study reveals that despite being beneficial to marginal farmers, the results of soil sample analysis for the preparation of the SHC needs to be done well in time before the sowing season.

4. PARAMPARAGAT KRISHI VIKAS YOJANA (PKVY)

India has the highest number of organic producers in the world and ranks 9th in terms of area under organic agriculture (Mukherjee et al. 2017). Thus, the country’s potential for development of organic agriculture is huge. Realising the need to promote organic farming, PKVY was launched in 2015. PKVY intends to encourage commercial organic farming in India by creating an organic certification system based on involvement of producers and consumers in the certification process so that it is characterised by mutual trust and local relevance (PKVY 2017). This kind of certification is called the Participatory Guarantee System (PGS) under the scheme. As of now, 27.7 lakh ha area has been certified organic through PGS and third-party certification in India (PIB 2019).

At the time of its launch, the scheme had a target of converting 2 lakh ha of cropped area into organic farms by forming 10,000 organic clusters of 20 ha each by 2017-18. Against this target, the scheme has brought 4.3 lakh ha area under organic cultivation as of now (PKVY n.d.). An impact assessment study of the scheme revealed that shifting to organic farming leads to a decrease in cost of cultivation for farmers by 10-20% resulting in a 20-50% increase in net returns (Reddy 2017a: xi-xix). The net returns are more prominent for paddy and cotton crops, which otherwise have huge input costs for fertilizers and pesticides. However, the study also revealed that most farmers under the scheme have medium and large landholdings on which they practise both conventional and organic farming, and not only the latter. There is, thus, a need to promote the scheme among marginal and small farmers, particularly in tribal, rainfed, hilly and remote areas.

Some key constraints in the success of PKVY as per the study are:

- Delay in release of allocated funds by state governments.
- Reluctance among farmers in converting to organic farming because of the labour-intensive nature of preparation of inputs for organic farming.
- Lower price realisation on organic produce by farmers because of lack of awareness about PGS certification among consumers, retailers and wholesalers.
- No significant increase in yields in the initial years of converting to organic farming, which discourage farmers from adopting these practices.

PRADHAN MANTRI KRISHI SINCHAYEE YOJANA (PMKSY)

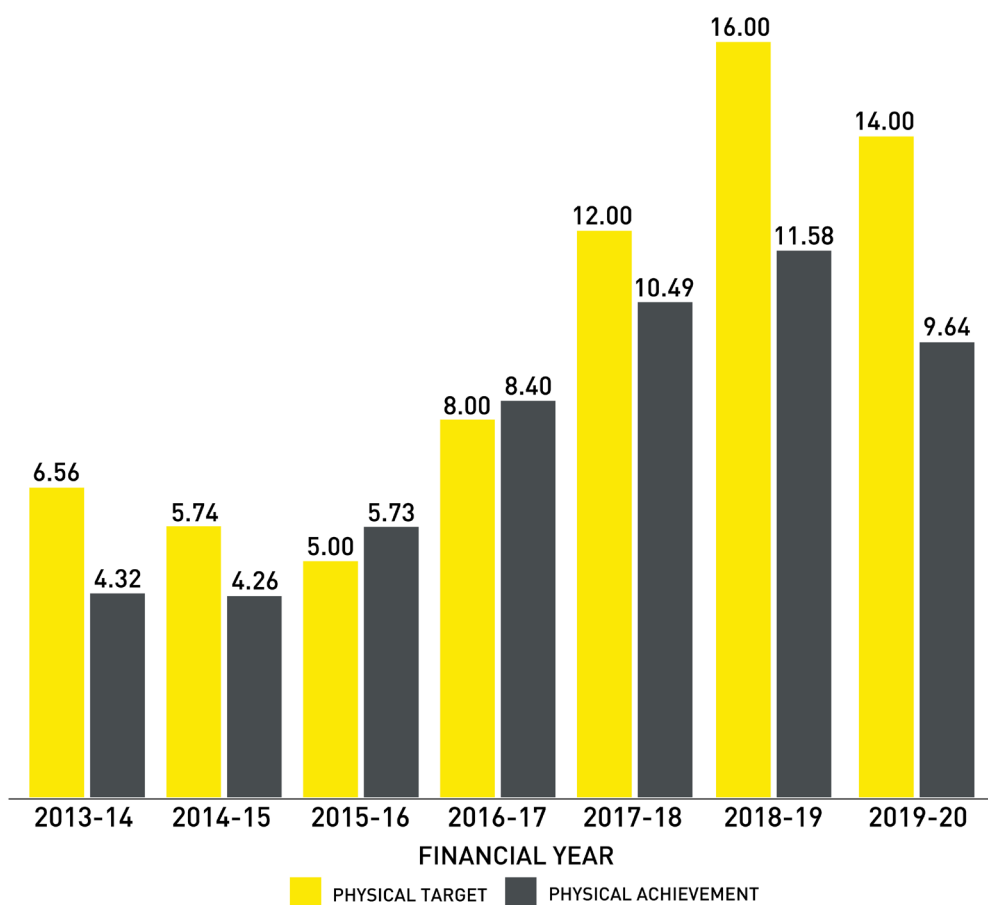
PMKSY is another much publicised central government scheme that focuses specifically on expanding the irrigation infrastructure in the country, particularly to rainfed regions, as well as improving water-use efficiency in agriculture. Launched in 2015, the scheme has four broad components that address specific issues related to water use in agriculture:

- Accelerated Irrigation Benefit Programme (AIBP) - Aimed at faster completion of medium and major irrigation projects.
- Har Khet ko Paani - Promoting minor irrigation, rain water harvesting structures, and developing groundwater in areas of abundance.
- Per Drop More Crop (PDMC) - Expanding micro-irrigation techniques such as drip and sprinkler irrigation that conserve water, and improving water-use efficiency.
- Watershed Development - Revitalising traditional water bodies and managing surface run-off (PMKSY n.d.).

Activities under the scheme are planned and implemented through District Irrigation Plans (DIP) prepared at the block as well as district levels by taking into account the irrigation requirements of a particular area. Expanding micro-irrigation and improving overall water-use efficiency in agriculture is crucial for a country like India where 80% of available water resources are consumed in agriculture and more than 60% water in irrigated regions goes into water-guzzling crops like paddy and sugarcane (Bisht 2019: 2-3).

Available information suggests that against 99 prioritised projects under the AIBP component, only 31 projects were either completed or almost completed at the end of June 2018 (NITI Aayog 2019). Figure 1 shows the area covered under micro-irrigation as part of the PDMC component of the scheme, before and after the launch of PMKSY. As can be seen, there has been a substantial increase in the area under micro-irrigation after 2015-16, even though the scheme has not been able to meet its annual targets.

FIGURE 1: AREA COVERED UNDER MICRO-IRRIGATION - TARGETS VS ACHIEVEMENTS (AREA IN LAKH Ha)



SOURCE: PMKSY 2020

PRADHAN MANTRI FASAL BIMA YOJANA (PMFBY)

Launched in 2016, PMFBY provides crop insurance coverage to farmers spanning pre-sowing to post-harvest period to offset losses against non-preventable natural risks. The scheme involves use of crop cutting experiments (CCE) to determine crop loss, based on which insurance payouts are made. Earlier, crop insurance schemes in the country were plagued by high premium rates, delays/non-payment of dues, inadequate insurance sums, inadequate government support on subsidies on premiums, low coverage of land area and number of farmers insured (Gulati et al. 2018). PMFBY intends to address these issues by introducing technological interventions such as mobile phone apps for data collection and communication and digitised land records linked to farmers' bank accounts for better settlement of claims (Gulati et al. 2018).

The scheme also intends to increase coverage by making crop insurance compulsory for those farmers who apply for loans for growing notified crops (MoAFW n.d.).

However, the scheme has been plagued with major implementation issues since its launch. As per the scheme, the central and state governments have to pay 50:50 share of the subsidies on premiums. It has been reported that most states do not make timely payments of their share of the subsidies (Damodaran 2018).

The delays are not just limited to the subsidy share. The scheme also requires that states provide yield/crop data to insurance companies based on CCEs within one month of harvesting. Yet, most states do not complete this process in a timely manner leading to sometimes low and sometimes delayed payouts (Ibid.). The 30th report of the parliamentary committee on estimates, while discussing PMFBY, noted that there was a decrease in the overall area insured under the scheme during 2015-16 and 2017-18 from 53.7 mha to 47.5 mha (Lok Sabha Secretariat 2018: 70). As against the scheme's target of covering 40% of India's gross cropped area, it could only cover less than 24%. The report also noted that as most farmers are receiving paltry sums of insurance payouts on crop failure, they are losing interest in the scheme.

THE COVID-19 SHOCK: PREPARING BETTER

The analysis above shows that even though agricultural policymaking in recent years has acknowledged and responded to the problem of sustainability in a holistic manner, severe gaps exist in implementation. These gaps make the agriculture supply chain and value chain from the farmer to the consumer as vulnerable as ever to unforeseen circumstances, whether in the form of extreme weather events or the ongoing COVID-19 pandemic. The national lockdown to contain the spread of the coronavirus came at the tail end of the rabi season when crops were about to be or being harvested. The restrictions on movement also dented the availability of agricultural labour to harvest crops as well as posed challenges for transportation of produce from farms across the country. Any delay in harvesting does not just put the standing crop at risk of being destroyed, but also significantly delays the preparation of fields for the kharif season. Regions that have higher agricultural mechanisation may have handled the labour shortage better, but given that more than 85% of India's farmers have marginal and small landholdings that cannot support widespread mechanisation, it is safe to say that most farms would have faced difficulties in harvesting rabi crops. Additionally, the government identified a decrease of 20-25% in milk demand during the lockdown that affected the income of dairy farmers.

As part of its Atma Nirbhar Bharat initiative, the central government has provided INR 2 lakh crore concessional credit to 2.5 crore farmers who have Kisan Credit Cards (PIB 2020a). Another INR 30000 crore are said to be provided to farmers in the form of emergency working capital funding through NABARD to meet requirements post the rabi harvest and for the kharif season. It should be noted here that these are essentially provisions for crop loans which will inevitably lead to increased debt on small and marginal farmers who are already caught up in a debt cycle, resulting in lakhs of farmer suicides over the last two decades. The government also announced Minimum Support Price (MSP) purchases to the tune of INR 74,300 crore and direct benefit transfer of INR 18,700 crore cash to farmers' bank accounts under the PM-KISAN scheme during the lockdown (PIB 2020b). While cash transfers are crucial not just

to offset income losses due to the COVID-19 disruption but also to stimulate market demand, the MSP purchases have long-term implications for environmental sustainability in agriculture. This is because progressively high MSPs on crops like wheat, sugarcane and paddy have incentivised farmers to stick to growing these crops for decades leading to depletion of groundwater, soil nutrient loss and land degradation across major agricultural states in India (Bisht 2019). Even though MSP purchases might seem reasonable in the face of the pandemic, the government should dismantle the MSP regime if it seeks a more sustainable future for farmers.

Some other welcome announcements for the agriculture sector under the Atma Nirbhar Bharat initiative that have promising long-term implications include:

- INR 1 lakh crore Agri Infrastructure Fund to finance farm-gate and post-harvest infrastructure including cold chains to fill critical gaps in agricultural value chain.
- INR 20,000 crore under the new Pradhan Mantri Matsya Sampada Yojana to enable sustainable and inclusive development of marine and inland fisheries.
- To create resilient agricultural supply chains that can prevent price reduction and distress sale of perishable goods, 50% subsidy on transportation from surplus to deficient markets and 50% subsidy on storage facilities.

In conclusion, it is to be noted that while the government's intention to make agriculture and allied activities environmentally sustainable, remunerative, and climate-adaptive is visible in old and new schemes, gaps in implementation and deficiencies in cooperation between the centre and the states is also evident across all the schemes. Even as part of the slew of reforms brought in response to the COVID-19 pandemic, there is neither any mention of measures to improve implementation, nor any provision for a robust mechanism to ensure greater cooperation between the state governments and the centre. It is essential that the government recognises this crucial gap in administration and governance for any scheme to be successful in achieving its intended aim as well as to have any lasting impact on sustainability in agriculture.

BIBLIOGRAPHY

Bisht, Jitendra, (2019). *Indian Agriculture: The Transition to Sustainability*. Social and Political Research Foundation, New Delhi.

<https://www.sprf.in/post/indian-agriculture-the-transition-to-sustainability>

Damodaran, Harish (2018). “Pradhan Mantri Fasal Bima Yojana: Flagship crop insurance scheme runs into rough weather”. *The Indian Express* April 26 2018.

<https://indianexpress.com/article/india/pradhan-mantri-fasal-bima-yojana-flagship-crop-insurance-scheme-runs-into-rough-weather-5151805/>

Gulati, Ashok, Prerna Terway and Siraj Hussain, (2018). “Crop Insurance in India: Key Issues and Way Forward”. *Working Paper No. 352*. ICRIER: New Delhi.

http://icrier.org/pdf/Working_Paper_352.pdf

Lok Sabha Secretariat, (2018). *Committee on Estimates 2018-19 Thirtieth Report: Performance of the National Action Plan on Climate Change*. Sixteenth Lok Sabha.

https://eparlib.nic.in/bitstream/123456789/783946/1/16_Estimates_30.pdf#search=null%20Estimates%20Committee

Ministry of Agriculture and Farmers Welfare, (n.d.). *Background of evaluation of Crop Insurance in India*. Government of India.

<http://agricoop.nic.in/sites/default/files/AGRICULTUR%20INSURANCE-Credits.pdf>

Ministry of Agriculture and Farmers Welfare, (2016). *Sub-Mission on Agroforestry: Operational Guidelines*. Government of India.

https://nmsa.dac.gov.in/pdfdoc/Agroforestry_Guidelines_English.pdf

Ministry of Agriculture and Farmers Welfare, (2017). *National Mission for Sustainable Agriculture: Operational Guidelines*. Government of India.

<http://agricoop.nic.in/sites/default/files/NMSA%20-%20Guidelines%20updated%20on%2009.02.2017%20%20.pdf>

Ministry of Agriculture and Farmers Welfare, (2019). *Annual Report 2018-19*. Government of India.

http://agricoop.nic.in/sites/default/files/AR_2018-19_Final_for_Print.pdf

Mukherjee, Arpita, Souvik Dutta, Tanu M. Goyal, Avantika Kapoor and Disha Mendiratta, (2017). *Organic Farming in India: Status, Issues and Way Forward*. Academic Foundation, New Delhi.

National Mission for Sustainable Agriculture, (n.d.). *Achievement under sub-mission on Agroforestry*. NMSA.

<https://nmsa.dac.gov.in/RptAchievementAgro.aspx>

National Mission for Sustainable Agriculture, (n.d.). *All India achievement under Rainfed Area Development*. NMSA.

<https://nmsa.dac.gov.in/RptActivityAchievement.aspx>

NITI Aayog, (2019). "Achievements in the year 2018-19".

<https://niti.gov.in/verticals/land-and-water-resources/achievements-of-the-year-2018-19>

OECD/ICRIER, (2018). *Agricultural Policies in India*. OECD Food and Agricultural Reviews. OECD Publishing: Paris.

<https://www.oecd-ilibrary.org/docserver/9789264302334-en.pdf?expires=1589787765&id=id&accname=guest&checksum=73A3C0047EEF0B6036D9A83A72CB267B>

PIB, (2017). *100 million Soil Health Card distributed to farmers in the first phase (2015-2017): Agriculture Minister*. Government of India.

<http://pib.nic.in/newsite/PrintRelease.aspx?relid=174111>

PIB, (2018). *Decline in Agriculture Cost*. Government of India.

<http://pib.nic.in/newsite/PrintRelease.aspx?relid=181606>

PIB, (2019). *27.77 lakh hectares covered under organic farming in the country: Union Agriculture Minister*. Government of India.

<http://pibarchive.nic.in/newsite/erelease.aspx?relid=194638>

PIB, (2020a). *Atmanirbhar Bharat Part 2: Poor, including migrants and farmers*. Government of India.

<https://static.pib.gov.in/WriteReadData/userfiles/Aatma%20Nirbhar%20Bharat%20presentation%20Part-2%2014-5-2020.pdf>

PIB, (2020b). *Atmanirbhar Bharat Part 3: Agriculture*. Government of India.

<https://static.pib.gov.in/WriteReadData/userfiles/Aatma%20Nirbhar%20Bharat%20Presentation%20Part-3%20Agriculture%2015-5-2020%20revised.pdf>

PKVY, (2017). *Paramparagat Krishi Vikas Yojana: Manual for District-Level Functionaries*.

<https://darpg.gov.in/sites/default/files/Paramparagat%20Krishi%20Vikas%20Yojana.pdf>

PKVY (n.d.). "Paramparagat Krishi Vikas Yojana".

<https://pgsindia-ncf.gov.in/pkvy/Index.aspx>

PMKSY (n.d.). *Operational Guidelines of Pradhan Mantri Krishi Sinchayee Yojana*.

https://pmksy.gov.in/pdflinks/Guidelines_English.pdf

PMKSY (2020). "Per Drop More Crop - Micro Irrigation."

<https://pmksy.gov.in/mis/frmDashboard.aspx>

Reddy, A Amarender, (2017a). *Impact Study of Paramparagat Krishi Vikas Yojana*. National Institute of Agricultural Extension Management (MANAGE): Hyderabad.

<https://www.manage.gov.in/publications/reports/pkvy.pdf>

Reddy, A Amarender, (2017b). *Impact Study of Soil Health Card Scheme*. National Institute of Agricultural Extension Management (MANAGE): Hyderabad.

<http://www.manage.gov.in/publications/reports/shc.pdf>

Soil Health Card (n.d.). "Scheme Progress".

<https://soilhealth.dac.gov.in/publicreports/dashboardtargetreport>

