

Are Government Sponsored Financial Supporting the Horticultural growth among North-Eastern States of India? Reviewing the Insurance and Credit Landscape

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Abstract: Indian economy has been driven by agriculture since time immemorial. It currently employs more than 50% of its total workforce in agriculture while contributing around 17-18% in the country's gross domestic product. Even though the trend percentage of workforce is declining at present, agriculture will undoubtedly remain the economy's backbone for a long time to come. As such, it becomes necessary to support and strengthen the backbone, and evade contingencies of climate change and land-use change, so that an increased horticultural productivity is sustained with no excess pressure on the environment. National Mission for Sustainable Agriculture (NMSA) was introduced to propagate the idea of sustainable agricultural practices in traditional farming. In this context, North-East India has immense potential but has been sitting on the back burner for a number of causes. The present paper envisages to discuss the status of NMSA in terms of its implementation with respect to its objectives of horticultural insurance and credit support vis-à-vis the eight North-Eastern states. Observations indicate a number of shortfalls in insurance coverage for farmers and lack of credit support, which if addressed could absolutely bring a radical change in the region's agricultural scenario.

Keywords: Horticulture, National Mission for Sustainable Agriculture, Crop Insurance, Credit

INTRODUCTION

Indian economy has been driven by agriculture since time immemorial. Mahatma Gandhi describing India "to be living in its villages" underlines today's reality that India employs more than 50% of its total workforce in agriculture while contributing around 17-18% in the country's gross domestic product (GDP) (Sunder, 2018). It is imperative to note that the share of agriculture in India's GDP has been declining rapidly since the 1991 economic reforms and more so in the last few years (Ahluwalia, 2019). The percentage of workforce employed in the primary sector has also been

declining, with more labour moving into the manufacturing and services sector (Emerick, 2018). Although, it is of no doubt that India will continue to have agriculture as the backbone of its economy for a long time to come. As such, it becomes necessary to support and strengthen the backbone, and evade contingencies of climate change and land-use change, so that an increased agricultural productivity is sustained with no excess pressure on the environment (Khanna, 2018). Moreover, the role of climate change in causing erratic monsoon patterns, increased humidity, breeding of invading species and pests, while creating stress on crops has been evident with increasing crop failures, resistance to pests (Grace *et al.*, 2019) along with huge economic losses and loss of livelihood for farmers (Sarkaria and Padaria, 2018) is well known. Besides, creation of negative externalities such as pollution, damage to natural resources or financial and production costs has been widely observed (van Kooten, 2019).

Contemporary literature has projected sustainable agriculture to be a method through which the agricultural aspect of an economy can be rejuvenated and strengthened with respect to climate change and other emerging pressures (Chandra *et al.*, 2019). Sustainable agriculture refers to practicing agriculture in ways that are sustainable i.e. meeting society's need for food and textile whilst not compromising on the ability of future generations to meet their own needs (Keeney, 1990). India has been one of the pioneering nations in implementing sustainable agriculture as a policy instrument after the government launched the National Mission for Sustainable Agriculture (NMSA) under the National Action Plan for Climate Change (NAPCC) in 2010. The primary objective of NMSA is to propagate the practice of sustainable agriculture among Indian states, thereby improving the status of agriculture in India. The mission lays out ten mission interventions which include distributing improved crop seeds, develop livestock and fish culture, increase water efficiency, pest management, improved farm practices, nutrient management, agriculture insurance, credit support, develop markets, access to information and livelihood diversification.

In the context of India, Samantaray (2015) observed that more than 70% of agricultural population do not have any concept of sustainable agriculture and are totally dependent on traditional methods. Interestingly, popular literature successfully covers the ecological, scientific and technical aspects of sustainable agriculture, whereas, covering its economic aspects has not been observed. This is more so in the case of India's North-Eastern (NE) states. Notably, Deepa *et al.* (2018) observed that except Assam, insurance scenario in other NE states stood to be very grim. They observed that farmers benefitted from insurance payments had a significant effect on the area

insured and farmers' coverage over the years, concluding that insurance coverage of farmers played a vital role in increasing the area insured, ultimately improving their agricultural productivities.

If we relate contemporary literature with NMSA implementation, there is still no such literature that can be referred to as benchmarks. It is imperative to mention here that, due to climate change, reduction of agriculture yields in the medium term (2010-2039) for India has been estimated to be upto 4.5- 9 % with a fall in GDP growth rate to upto 2% per annum (Guiteras, 2009). In the long-term, this is supposed to fall to more than 25% (by 2040) if no measure is taken. In this context, NMSA plays an immense role to sustain agriculture and prevent such extreme scenarios. In light of this, the present paper envisages to discuss the status of NMSA in terms of its implementation of the objectives of agricultural insurance and credit support vis-à-vis the eight NE states of India.

MATERIALS AND METHODS

The NE region of India has been chosen as the study area as it has the most potential for agricultural development yet is immensely backward (Kathuria and Mathur, 2019). Further, the present study entails an assessment of two specific objectives of NMSA, as has been described previously and examines their efficacy in making sustainable agriculture a success. The study is descriptive in nature and derives on secondary data compiled from internationally recognised agencies for analysis and discussion. The study has been done for the period 2018-19.

RESULTS AND DISCUSSION

Agricultural Insurance

Agricultural insurance is a crucial instrument that can address risks to agricultural production, output and income from climate change contingencies (Chandra et al., 2019). It works as an incentive for farmers in adopting innovative options that spread risks over space and time (NMSA, 2010). An important outcome of insurance programmes is that they enable farmers to pay off outstanding debts, while maintaining the viability of formal financial institutions (Tsegai and Kaushik, 2019). It also cuts off huge government expenditures that are otherwise incurred in writing-off agricultural loans (Kiiru, 2018).

Sustainable agriculture in India's context relates primarily to climate change contingencies or similar occurrences that affect the viability of agriculture. For the NE states of India, flood has been the greatest climate

change related contingency that tends to make a dent in the region's economy time and again. In case of Assam, the share of loss in rice production due to recurrent floods varied from 3% in 2005-06 to 49% in 2014-15 with an average of 21% (Chetia *et al.*, 2015). Statistics indicate that more than 53.5 lakh people of over 3 crore population of Assam are under constant threat of floods and 95% of these are agriculture-based communities (Begg, 2019). In the 2019 flood, about 2 lakh hectares of crop land has been affected by flood waters with most of the agricultural land being covered with silt, rendering them uncultivable to a considerable extent (Pahwa, 2019). A similar trend has been seen in some parts of Tripura and Meghalaya (Jamir *et al.*, 2008). It is also important to note that the annual mean temperature in Assam has increased by 0.59^o C over the last 60 years (1951-2010), and is likely to increase by 0.50^o by 2050 (APGCL, 2018). In short, the agricultural economy in the region today is highly vulnerable to climate change, leading to inconsistencies in production and livelihood dependence. Therefore, it becomes highly imperative that agricultural insurance is given due importance so that the pressures created due to crop losses and associated livelihood losses are cushioned and agricultural communities get a hand-holding support from the government.

It has been seen that crop insurance coverage of the northern states of India have been very promising, compared to NE states. In states like Bihar and Madhya Pradesh, more than 50% of the gross sown area is insured. Insurance schemes primarily include the National Agriculture Insurance Scheme (NAIS), Pradhan Mantri FasalBima Yojana (PMFBY) and the Weather Based Crop Insurance Scheme (WBCIS). When we compare the insurance scenario of NE states with that of other Indian states, statistics represents an uneven picture. For explanation, we have represented a comparison of insurance scenario for Assam and Bihar vis-à-vis NAIS, PMFBY and WBCIS in the following table. We have taken Assam and Bihar specifically as both of them share similar geographical characteristics with respect to agricultural production and more than 50% of their population is involved in agriculture. Another significant reason is that they are ravaged by floods almost every year, with Bihar facing comparatively little destruction than Assam.

From Table 1, it is evident that under NAIS and PMFBY, Assam stands way behind Bihar in response to insurance coverage. Interestingly, Assam had zero claims of insurance under PMFBY which seems a bit unrealistic, as PMFBY is the most comprehensive of all the insurance schemes. Bihar performs extensively well in terms of claims paid as well as premium payments in all the schemes. In case of NE states, for 2018, out of INR 1,400 crore annually earmarked for NE states under PMFBY, only INR 8 crore

Table 1
Crop insurance coverage under different schemes vis-à-vis States of Assam and Bihar for FY 2015-16

States	No. of Famers covered	Area insured (ha.)	State Govt. premium share (in INR)	GOI premium share (in INR)	No. of Claims reported	No. of Claims paid	No. of farmers benefitted
National Agriculture Insurance Scheme (NAIS)							
Assam	422654	309427	130.77	130.77	1693.36	1693.36	66123
Bihar	10707824	11710269	2566.75	2566.75	406422.77	345926.89	4439281
Pradhan Mantri Fasal Bima Yojana (PMFBY)							
Assam	8516	4312.95	43.47	43.47	0	0	0
Bihar	2713178	2465249.21	60850.73	60850.73	32717.98	13015.92	149698
Weather Based Crop Insurance Scheme (WBCIS)							
Assam	67634	38963.86	86904.17	89458.40	199984.36	149711.42	10712377
Bihar	12885954	13114092.98	12093.90	11149.55	31947.25	31947.25	843828

Source: Department of Agriculture, Cooperation & Farmers Welfare

has so far been spent. More surprisingly, Arunachal Pradesh, Nagaland, Manipur and Mizoram, haven't been covered by the scheme at all. In spite of this, Assam does show a promising picture in terms of farmers benefitted when it comes to WBCIS. It is important to note here that sustainable agriculture falls under all the schemes mentioned above, and for its success, it is imperative that these schemes should cover the farmers and their sown areas comprehensively in the respective states.

In light of this, the role of NMSA with regard to agricultural insurance can be termed as discouraging. It being the only mission that deals with developing sustainable agricultural practices and bearing the responsibility of propagating them, statistics, however, paint a different picture. The following table represents the trend of agricultural insurance delivered by the Government of India with respect to the net area sown in respective NE states.

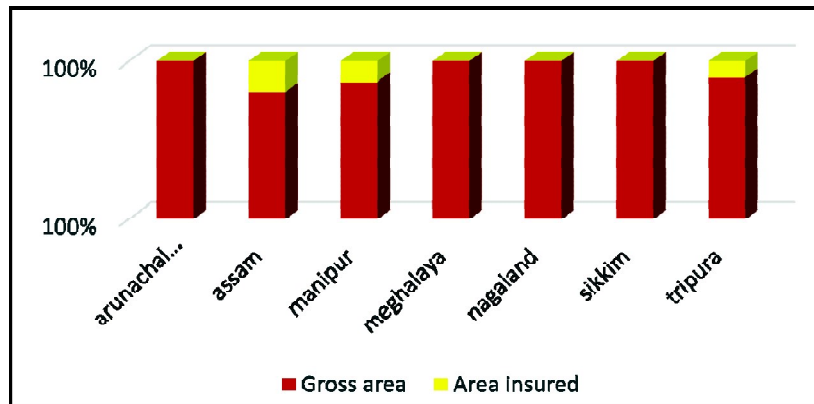
Following from Table 2 and Figure 1, it is very clear that insurance coverage in NE states with respect to agriculture is in a rudimentary and depressing state. As per 2016-17 data, gross area insured is approximately nil in Arunachal Pradesh, Meghalaya, Mizoram and Sikkim. Since majority of population in these states are agriculturists, it is astonishing to see no such insurance coverage existing in them. Sikkim has garnered the title of an organic state. Organic farming forms a principal part of sustainable agriculture and also demands good insurance coverage if organic

Table 2
Gross area sown and total area insured under insurance schemes in
North Eastern states for FY 2016-17 (in hectares)

States	2012-13		2013-14		2014-15		2015-16		2016-17	
	Gross area sown	Area insured	Gross area sown	Area insured	Gross area sown	Area insured	Gross area sown	Area insured	Gross area sown	Area insured
Arunachal Pradesh	2.85	0	2.85	0	2.99	0	2.99	0	2.99	0
Assam	41.97	0.43	41.97	0.3	40.83	0.3	40.83	0.29	40.83	0.41
Manipur	3.09	0.014	3.09	0.1	3.83	0.06	3.83	0.17	3.83	0.09
Meghalaya	3.4	0.02	3.4	0.03	3.43	0.01	3.43	0.01	3.43	0
Mizoram	4.89	0	4.89	0	5	0	5	0	5	0
Sikkim	1.44	0	1.44	0	1.36	0	1.36	0	1.36	0
Tripura	3.68	0	3.68	0	4.83	0	4.83	0.01	4.83	0.05

Source: Department of Agriculture, Cooperation & Farmers Welfare

Figure 1: Insurance coverage in NE states FY 2016-17
(Author's calculation)



horticulture has to sustain over a long period of time. It is indeed interesting to see no insurance coverage in Sikkim, although there is ample need for it if sustainable agriculture has to achieve success in such emerging fields. Therefore, incentives should be laid out by the government to make them cultivate new and high quality high-yielding crops through increased insurance penetration. An additional assurance of no premium/ negligible premium should be given to farmers if and when they employ sustainable agriculture techniques or associated methods.

Credit Support

Credit support, one of the objectives of NMSA, is a crucial factor that determines the agricultural productivity of a particular region. It is important to note that credit support does not mean mere issuance of loans to farmers against loan applications. It also refers to “designing innovative schemes and products that recognise the varied nature of agri-business and supply chains for different farming systems, food systems and communities” (NMSA, 2010). Credit flow is also necessary for conservation farming along with diversification of agriculture. In this context, developing credit plans with a higher component of direct finance with a special emphasis on small and marginal farmers bears significance as it tends to reduce their dependence on informal credit institutions such as moneylenders. Another important aspect associated with credit support is the provision of financial support for investment and adoption of relevant technologies to overcome climate related stress. NMSA, as part of this objective, also focusses on upscaling the Kisan Credit Card Scheme (KCCS) so as to cover all eligible farmers. As such, for sustainable agriculture to be successfully practiced, credit support under NMSA should be favourable to farmers in the NE region.

With respect to loan coverage, data has been displayed below. It is imperative to note that majority of population in NE states are agriculturists, however, loan accounts fall short of what should have been in an optimal scenario.

It is evident from table 3 that in almost all of the states, not even 50% of the population has loan accounts. This is discouraging as unavailability of loan accounts may also imply non-existence of bank accounts. Loan accounts are imperative for farmers for improving agricultural practices, upgrading their equipment and purchasing better yielding seeds (Jha 2018). This evidence can be better substantiated by the following diagram and table 4.

As evident from table 4, the crop loan scenario is not very encouraging. This can imply several shortfalls with respect to credit provisioning among these states. In states like Mizoram and Sikkim, loan coverage scenario is pretty dismal, compared to rest of the states in India.

Even with respect of issuance of KCCs, the implementation hasn't been observed as aggressively as it should have been. KCC forms one of the most substantial pillars in strengthening the agricultural framework of India. Its objective is to meet the comprehensive credit requirements of the agriculture sector by giving financial support to farmers. Credit types include short term credit and term loans, along with personal accident

Table 3
Agricultural population and respective number of loan accounts in NE states for FY 2017-18

<i>States</i>	<i>Agricultural population (in lakh)</i>	<i>Number of accounts (in lakh)</i>
Arunachal Pradesh	6,30,000	4038
Assam	15,450,000	389927
Manipur	13,60,000	13754
Meghalaya	13,25,000	36054
Mizoram	5,60,000	7254
Nagaland	11,40,000	21304
Sikkim	4,89,600	5027
Tripura	18,30,000	86,806

Source: Department of Agriculture, Cooperation & Farmers Welfare

Table 4
Agricultural loan disbursed to NE states in FY 2016-17

<i>States</i>	<i>2016-17</i>		<i>2015-16</i>		<i>2014-15</i>	
	<i>No of accounts (in lakh)</i>	<i>Crop loan disbursed (Rs. in crore)</i>	<i>No. of accounts (in lakh)</i>	<i>Crop loan disbursed (Rs. in crore)</i>	<i>No. of accounts (in lakh)</i>	<i>Crop loan disbursed (Rs. in crore)</i>
Arunachal P.	4038	27.77	2334	73	5	34
Assam	389927	1568.20	3350	160802	359	1830
Manipur	13754	58.99	8623	9	15	64
Meghalaya	36054	281.70	17956	60	40	166
Mizoram	7254	30.36	4450	42	9	37
Nagaland	21304	72.90	7927	62	20	87
Sikkim	5027	107.97	3868	44	6	48
Tripura	86806	335.08	49853	246	109	474

Source: Department of Agriculture, Cooperation & Farmers Welfare

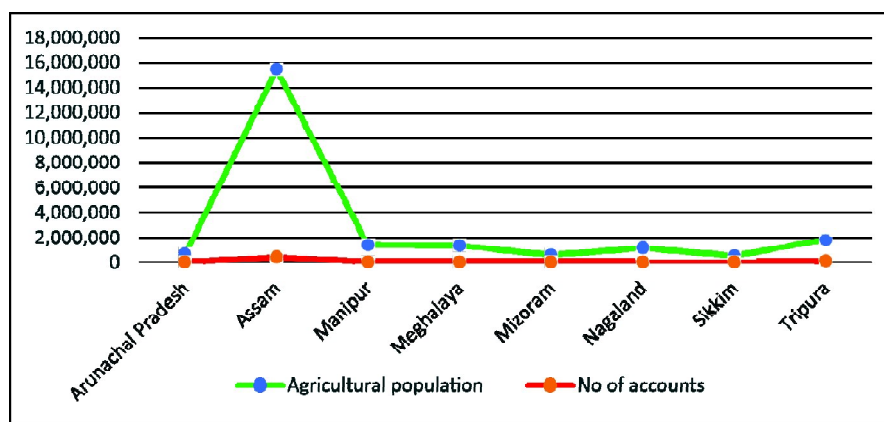
insurance coverages. Therefore, KCC forms a crucial instrument in propagating the practice of sustainable agriculture among the NE states. However, as is enumerated below, KCC cards issuance has been on the back-burner for most of these states. For instance, Assam has issued only 10.77 lakh KCCs which doesn't cover even 20% of the total number of farmers in the state. Moreover, in Mizoram and Meghalaya where more than 7 lakh and 36 lakh farmers exist respectively, only 37,000 and 1,39,000 KCCs have been issued in both states.

Table 5
Number of Kisan Credit Cards issued since inception in 1998
(State-wise and agency-wise)

States/agencies	Cumulative cards issued since inception (in lakh)			
	Commercial Banks	Cooperative Banks	RRBs	Total
Arunachal Pradesh	0.39	0.01	0.07	0.47
Assam	10.77	0.04	6.49	17.3
Manipur	0.41	0	0.17	0.58
Meghalaya	1.39	0.24	0.44	2.07
Mizoram	0.37	0.01	0.15	0.53
Nagaland	0.86	0.06	0.02	0.95
Sikkim	0.27	0.12	0	0.39
Tripura	3.70	1.10	2.41	7.21

Source: Department of Agriculture, Cooperation & Farmers Welfare

Figure 2: Loan accounts compared to agricultural population
(Author's calculation)



We can see a huge gap between issuance of KCCs and farmer population of the NE states following the table 5. It must be noted that KCC scheme was launched in 1998, and even after 21 years, it has remained grossly under-implemented in NE states.

To rectify the deficit in credit support efforts, efficient penetration of Jan Dhan-Aadhaar- Mobile (JAM) trinity is much needed. It may be recommended that the Common Service Centres/Banking Correspondents/Self-help Groups (SHGs) in the grassroot levels should be made use of critically as they have a huge potential of nudging the farming population

towards stepping up their banking activities, and encourage to take them insurance coverage against cultivated crops. Customised credit programmes should be designed to mitigate risks that can support higher productivity in flood prone regions of the NE states. Emphasis on credit flow to conservation farming, agricultural diversification and other value-added activities should be given. Besides, development of loan plans with a greater direct finance element and a unique focus on small and marginal farmers to decrease their reliance on informal credit institutions is necessary. Further, specialised credit should be given for enabling investment and adoption of relevant technologies to prevent climate induced pressures.

CONCLUSION

It is of no doubt that agricultural insurance and credit support are one of the most critical nodal points of an agricultural economy, transitioning towards sustainability. These hold even greater significance for the NE states as a region holding immense agricultural potential yet is under-developed with respect to the cause. On account of the linkages they create with other economic sectors, or due to their *trickle down* effect on agricultural productivity and human capital, a strategic implementation of the agricultural insurance and credit support policies, in particular, and the NMSA, in general, can have a multiplier effect on the entire north-eastern agricultural economy.

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