POLICY
PAPER
91

Loan Waiving versus Income Support Schemes: Challenges and Way Forward

NATIONAL ACADEMY OF AGRICULTURAL SCIENCES, NEW DELHI
November 2019

Loan Waiving versus Income Support Schemes: Challenges and Way Forward

NATIONAL ACADEMY OF AGRICULTURAL SCIENCES, NEW DELHI

November 2019

CONVENER	:	Dr P.K. Joshi, Former Director - South Asia, IFPRI, New Delhi
CO-CONVENER	:	Dr Anjani Kumar, Research Fellow, IFPRI, New Delhi
EDITORS	:	Dr V.K. Bhatia and Dr Kusumakar Sharma
REVIEWER	:	Dr S.S. Acharya
CITATION	:	NAAS 2019. Loan Waiving versus Income Support Schemes: Challenges and Way Forward. Policy Paper No. 91, National Academy of Agricultural Sciences, New Delhi: pp.

Published by Dr Anil K. Bawa, Executive Director on behalf of
NATIONAL ACADEMY OF AGRICULTURAL SCIENCES
NASC, Dev Prakash Shastry Marg, New Delhi - 110 012
Tel: (011) 25846051-52; Fax: (011) 25846054
Email: naas-mail@naas.org.in; Web site: http://www.naasindia.org

Preface

In recent years, loan waivers have emerged as the prominent policy choice for addressing the issue of agrarian distress in India. Over the last one and half year, waivers of farm loans were announced by a number of State Governments such as Chhattisgarh, Karnataka, Maharashtra, Madhya Pradesh, Punjab, Rajasthan, and Uttar Pradesh. These announcements perhaps compelled the Central Government to announce farmer welfare scheme PM-KISAN and simultaneously several State Governments also came up with direct income support to farmers. The expansion of the loan waiver policy and the emerging income support schemes has prompted serious discussions and commentaries in the on-going economic and policy discourses in India.

In view of the seriousness and complexity of these issues, the National Academy of Agricultural Sciences (NAAS) organized a one-day brainstorming session (BSS) on **"Loan Waiving versus Income Support Schemes: Challenges and the Way Forward"** on 24th June 2019 at NAAS, NASC complex, New Delhi. The main objective of the brainstorming session was to deliberate on the efficacy of loan waivers in detail and explore the other alternative options such as income support system to deal with agrarian distress more efficiently and effectively. The BSS was attended by a group of scientists, policy makers, and farmers' representatives. Deliberations were enriched by their presence and lively participation. Besides the base paper, presentations by other experts included efficacy of farm loan waivers, advantages and challenges of income support schemes, and farmers' perspective on agricultural subsidies, loan waiving and income support. Besides these presentations, a panel discussion on Way Forward: Loan Waiver or Income Support was also organized.

On behalf of the Academy, I express my gratitude and sincere thanks to the Convener, Dr P.K. Joshi, Co-Convener Dr Anjani Kumar, all the other experts, stakeholders both from public and private institutions for their valuable inputs, besides the reviewer. My thanks are also to Dr V.K. Bhatia and Dr Kusumakar Sharma for their Editorial Support. I am hopeful that the Document will be useful to all Fellowship, researchers, policy planners and other stakeholders.

(Panjab Singh)
President, NAAS

Loan Waiving versus Income Support Schemes: Challenges and Way Forward

1. INTRODUCTION

Credit plays an important role in agricultural development. It enables farmers to undertake new investments and adopt improved technologies. Indeed, access to credit enhances the risk bearing ability of the farmers and encourage them to invest in some little risky ventures with higher potential returns (Diagne *et. al*., 2000). It also acts as a catalyst to break the vicious circle of poverty in rural areas (Coleman, 1999; Khandker and Faruquee, 2003; Awotide *et. al*., 2015). Realizing the importance of credit in promoting agricultural growth and development, the agricultural credit policy in India strives to build a strong structure to expand the outreach of institutional credit.

The main objective of the India's agricultural credit policy has been to improve farmers' access to institutional credit and reduce their dependence on informal credit. Informal credit is often spurious. In pursuit of this goal, the Government of India (GoI) has undertaken several initiatives. Major milestones in improving access to rural farm credit include acceptance of the Rural Credit Survey Committee's Report (1954), nationalization of the large commercial banks (1969 and 1980), establishment of Regional Rural Banks (1975) and the National Bank for Agriculture and Rural Development in 1982, and the 1991 financial sector reforms. Since the passage of historic 1991 financial reforms in India, the GoI also has launched farm credit programs including the Special Agricultural Credit Plan (1994-1995), Kisan Credit Cards (1998-1999), Doubling Agricultural Credit within three years (2004), 2008 Agricultural Debt Waiver and Debt Relief Scheme, the Interest Subvention Scheme (2010-11), and more recently, the 2014 Jan Dhan Yojana (Kumar *et. al*., 2015).

Simultaneously, several other measures have been taken to strengthen formal credit system in India. Examples include the establishment of the Lead Bank Scheme, direct lending for the priority sectors, and the banking sector's linkage with the Government-sponsored programs targeted at the poor. Other programs like the Differential Rate of Interest Scheme, the Service Area Approach, the Self-Help Group-Banks Linkage Program, Special Agricultural Credit Plans, and the Rural Infrastructure Development Fund were also introduced to enhance the flow of credit to the rural sector. These initiatives have had a positive impact on the flow of agricultural credit (Ghosh, 2005; Golait, 2007; Kumar *et. al*., 2010; Mohan, 2006; Hoda and Terway, 2015; Kumar *et. al*., 2015). Since the launch of Doubling Agricultural Credit in 2004, the actual credit flow has exceeded the target consistently, and the ratio of agricultural credit to agricultural GDP has increased from 10 per cent in 1999-2000 to about 43 per cent in 2016-2017 (Figure 1). In absolute terms also the institutional credit to agriculture grew from Rs 36860 crores in 1999 to Rs 1065800 crores in 2017-18.

A number of studies have shown that access to formal credit contributes to an increase in agricultural productivity and household income in developing countries like India (Binswanger and Khandker, 1995; Carter 1989; Carter and Weibe 1990; Feder *et. al*., 1990; Pitt and Khandker,

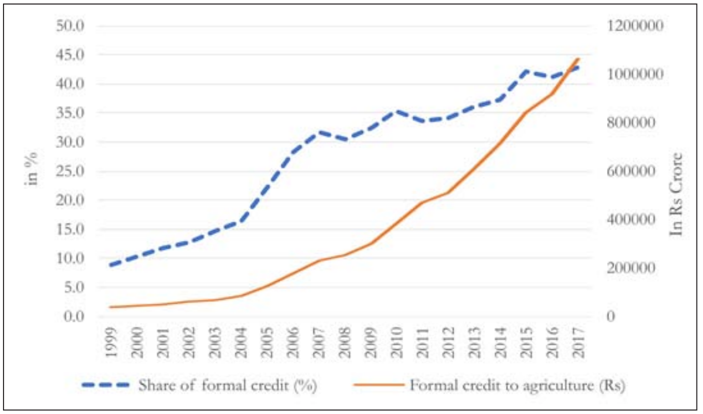

Figure 1: Flow of formal credit in agriculture

Source: National Accounts Statistics (2019), Ministry of Statistics and Programme Implementation, Government of India.

1996, 1998; Khandker and Farooqui 2003; Awotide *et. al*., 2015; Narayanan 2016; Kumar *et. al*., 2017). The access to institutional credit has the potential to increase farmers' income by 17 percent and consumption expenditure by 10 percent (Kumar *et. al*., 2017).

However, in recent years, loan waivers have emerged as the prominent policy choice for addressing the issue of agrarian distress in India. Over the last one and half year, waivers of farm loans were announced by a number of State Governments such as Chhattisgarh, Karnataka, Maharashtra, Madhya Pradesh, Punjab, Rajasthan, and Uttar Pradesh. On the other hand, the support to farmers witnessed a tectonic shift. The GoI announced PM-KISAN before the announcement of general election in 2019. The direct income support also found favour in several states and many State Governments have implemented direct income support to farmers. The major direct income support by the State Governments include Ryuthu Bandhu (Telangana), Krishak Bandu (West Bengal), Krishi Ashirwad Yojana (Jharkhand), and Krushak Assistance for Livelihood and Income Augmentation (Odisha). The magnitude and eligibility criteria vary across the states, but essence of these schemes remains the same. All these schemes have focussed on transferring some cash support directly to the farmers. The expansion of the loan waiver policy and implementation of direct income support prompted serious discussions and commentaries in the on-going economic and policy discourses in India. The loan waiver is a serious and complex issue which needs careful understanding and analysis. Similarly, the growing emphasis on direct income support to farmers needs to be understood from the perspective of ensuring sustainable and inclusive agricultural growth in India. In this backdrop, National Academy of Agricultural Sciences (NAAS) and International Food Policy Research Institute (IFPRI) organized a one-day brainstorming session on "**Loan Waiving versus Income Support Schemes: Challenges and the Way Forward**" on 24thJune, 2019 at NAAS, New Delhi. The main objective of the brainstorming session was to deliberate on the efficacy of loan waivers in detail and explore the other alternative options such as income support systems to deal with agrarian distress more efficiently and effectively.

The rationale of loan waiver scheme as a tool to address agrarian crisis needs careful analysis and scrutiny. Discussion in brainstorming session began with the presentation of base paper and a few other presentations on different dimensions of the loan waiving and direct income support to farmers. These presentations were followed by a panel discussion on the way forward for the support measures to address agrarian crisis in India. The deliberations included (1) fiscal prudence of the loan waiving, (2) inclusiveness of the schemes across categories and regions, (3) linkages with credit rationing in loan allocation in subsequent years, (4) adverse impact on the repayment culture among the borrowers, (5) political economy perspectives of the loan waiving, (6) availability of other instruments to address agrarian distress more efficiently and effectively, (7) comparison with direct income support like Rythu Bandhu, KALIA, PM-KISAN and other support measures, (8) trade-off between long term public investment in agriculture and loan waiving, and (9) linkage between loan waiving and agricultural productivity.

This Policy Paper is the outcome of the above BSS and is based on the views and experiences shared by the distinguished participants of the session. The following sections briefly discuss different issues of loan waiving schemes in India.

2. HISTORY OF LOAN WAIVERS IN INDIA

Loan waiver schemes are relatively a recent phenomenon in the independent India's history of 72 years. The first loan waiver was announced in 1987 by the then Chief Minister of Haryana, Chaudhary Devi Lal. In 1990, the then Prime Minister Shri V.P. Singh announced an agricultural debt relief scheme of 10000 crore for agricultural borrowers. This was the first agricultural loan waiver at the national level and the announcement was followed by a fierce debate and severe criticism by the economists and other policy think tanks. After this, there was virtually a moratorium on loan waivers for more than a decade and this new instrument of support to farmers re-emerged in mid 2000s. During 2005 to 2010, in spite of RBI warning that defaults and problems in recovery of dues would adversely affect the credit system, a number of States and the Central Government came up with debt relief schemes. In 2008, the Indian Government announced one of the largest debt waiver schemes in the history. The Agricultural Debt Waiver and Debt Relief Scheme waived Rs 70000 crore spread across 237 districts and reaching 30 million farmers (Kanz, 2012). A complete waiver was given to small and marginal farmers (holding land up to 2 hectares). Other farmers with land holding above 2 hectares were given 25 percent waiver. The scheme was introduced to address the increasing suicides amongst the farmers by alleviating their miseries. The other ostensible goal of the program was also to help public and private banks refinance themselves by cancelling their non-performing assets which had accumulated due to directed lending to rural communities over the years (Gine and Kanz, 2014). Over the next few years the program again received widespread criticism from economists. However, this did not stop State Governments from announcing further waiver programs.

The history of loan waivers is given in Table 1. It reveals that till 2005, there were only two loan waivers; one from Haryana Government in 1987 and the other from Government of India in 1990. Between 2005 and 2010, four loan waivers were launched: two in southern states of Kerala and Tamil Nadu, one in Maharashtra and the one large waiver by Government of India (GoI). The next five years 2010 and 2015, witnessed significant acceleration with announcement of five loan waivers, all from State Governments such as Karnataka, Chhattisgarh, Uttar Pradesh, Andhra Pradesh and Telangana. After 2015, the announcement further got momentum and already there had been nine loan announcements from the State Governments of Chhattisgarh, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, and two waivers in Karnataka alone. The broad trend suggests that loan waiver witnessed a steady acceleration over time especially after 2005. Further, loan waivers appear to be more popular among State Governments as compared to Central Government. Twenty of the 22 waivers listed in Table 1 were announced by State Governments while only two came from the Central Government.

Table 1: Chronology of loan waivers in India

S. No.	State	Year	Amount (Rs crore)	Political party in power
1.	Haryana	1987	227	Lok Dal
2.	Central Government	1990	10,000	Janata Party Government
3.	Kerala	2006	355	Communist Party of India (Marxist) (CPI(M))
4.	Tamil Nadu	2006	1,062	Dravida Munnetra Kazhagam (DMK)
5.	Central Government	2008	52,000	Congress Party (INC)
6.	Maharashtra	2008	4,950	Congress Party (INC)
7.	Karnataka	2012	3,500	Bhartiya Janata Party (BJP)
8.	Chhattisgarh	2012	3,200	Bhartiya Janata Party (BJP)
9.	Uttar Pradesh	2012	1,650	Samajwadi Party (SP)
10.	Andhra Pradesh	2014	24,000	Telugu Desam Party (TDP)
11.	Telangana	2014	16,374	Telangana Rashtra Samithi (TRS)
12.	Tamil Nadu	2016	7,769	All India Anna Dravida Munnetra Kazhagam (AIADMK)
13.	Uttar Pradesh	2017	36,359	Bhartiya Janata Party (BJP)
14.	Punjab	2017	10,000	Congress Party (INC)
15.	Maharashtra	2017	34,002	Bhartiya Janata Party (BJP)
16.	Karnataka	2017	8,165	Congress Party (INC)
17.	Rajasthan	2017	20,000	Bhartiya Janata Party (BJP)
18.	Madhya Pradesh	2017	6,000	Bhartiya Janata Party (BJP)
19.	Karnataka	2018	34,000	Janata Dal (Secular) (JD(S))
20.	Madhya Pradesh	2018	35,000	Congress Party (INC)
21.	Rajasthan	2018	15,000	Congress Party (INC)
22.	Chhattisgarh	2018	6,100	Congress Party (INC)

Source:RBI, Various Newspapers

In fact, post 2008, all the waivers were announced by different State Governments and none came from the Centre. Further, irrespective of ideological inclinations, all State Governments have announced loan waivers. In fact, there seems to be a race among different political parties to use this instrument to appease agrarian communities. Since the loan waiver has become a popular tool for all political parties, we need to examine the implications of this scheme more carefully.

3. FISCAL VIABILITY

The wave of loan waiver announcements led to serious discussion about the fiscal viability of the scheme in the long run. The loan waivers have been criticized for posing an additional burden on the limited financial resources of the State. Waivers are in general quite resource intensive. A simple state average of the loan waiver allocation as a percentage of the state budget works out to be as high of 9.1 percent with significant variation across states and time. This raises questions such as what if the resources committed to waivers were instead allocated towards longer-term investments in agriculture? What would have been the likely incremental investment? In place of a waiver, if the same amount is transferred to the agricultural budget; we can increase the annual agricultural budget by 22 percent to 670 percent in different states (Table 2). This could lead to substantive hike in the resources available for agricultural investment. This colossal investment can open up new possibilities for transforming the existing approach towards agriculture and rural development. The evidences show that if the investments are made appropriately impacts are larger. For instance, Bathla *et. al*., (2018) reported that marginal rate of return to investment in agricultural research and development is 2.47, implying that each rupee invested in agricultural research and development gives return of Rs 2.47. Further, Kumar *et. al*., (2017) show that access to formal credit can increase the net farm income by 17 percent. Better alternatives to loan waiver are available and, therefore, we should desist from implementing by and large non-productive resource intensive measures.

Table 2: Opportunity cost of the loan waiver policy

State	Year	Waiver (Rs in crore)	Agriculture budget (Rs in crore)	Waiver as % of agricultural budget
Karnataka	2018	34,000	5,080	669
Rajasthan	2017	20,000	3,072	651
Karnataka	2017	8,165	4,344	188
Maharashtra	2017	34,022	10,344	329
Punjab	2017	10,000	2,548	392
Uttar Pradesh	2017	36,359	11,589	314
Telangana	2014	16,374	6,312	259
Andhra Pradesh	2014	24,000	10,424	230
Uttar Pradesh	2012	1,650	7,625	22

Source: Phadnis, A. and Gupta, A. (2017)

4. COVERAGE OF BENEFICIARIES

Before analysing the impact of loan waivers, we need to first assess who are the beneficiaries and how many resource poor farmers are covered. Secondly, whether the more vulnerable regions are covered more or the advanced or developed regions are cornering the lion's share of benefits arising from the loan waiver schemes. A perusal of the Table 3 shows that only 1/3rd of the marginal and small farmers are formal borrowers and the remaining 2/3rd are either non-borrowers or have taken loan from informal sources. Therefore, the real benefit to marginal and small farmers will not accrue due to loan waiver scheme as loan waiver scheme typically caters to farmers who have borrowed from the formal sources. Once a loan waiver is announced, banks usually stop giving loans to farmers qualifying for loan waivers in the next loan cycles (Kanz, 2012; Gine and Kanz, 2014), which leads to credit rationing. The neglect of agriculture by the formal financial institutions as a consequence of loan waiver may push these cultivator households into the clutches of money lenders and other non-institutional sources. The interest rates charged by non-institutional sources were 25 percent per annum, which is more than two-times of the interest rate of institutional sources. Moneylenders are the major suppliers of informal credit, which accounts for about 69 percent of the informal credit, and charge an exorbitant rate of interest. The average rate of interest charged by the moneylenders is about 37 percent (more than three times of the interest rate of formal institutions) (Figure 2). One can imagine the fate of enterprise based on such a high cost of the financial capital. Further, a wide variation is seen in the interest rates charged by non-institutional agencies across states. For instance in 2013, the interest rate charged by non-institutional sources was the highest in Bihar (46.7%), followed by Manipur (39.6%), Odisha (27.5%), Madhya Pradesh (27.3%), Karnataka (24.3%), Andhra Pradesh (23.8%), Uttar Pradesh (23.7%), Sikkim (22.7%), and West Bengal (22.6%) (Kumar *et. al*., 2015).

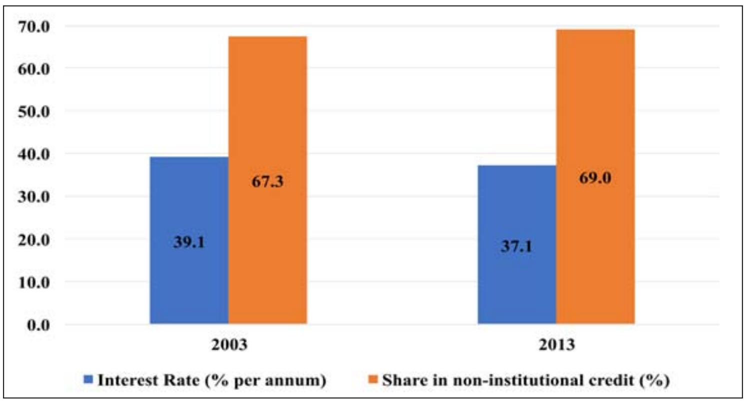

Figure 2: Interest rate and share of money lender in non-institutional credit

Table 3 further illustrates that loan waiver is neither inclusive across class nor inclusive across regions. The incidence of borrowing from formal sources is negligible in the north eastern states of India. Less than one percent marginal farmers in Meghalaya, Mizoram and Nagaland had access to formal credit in 2012-13 and only 3 to 6 percent of marginal and small farmers in Arunachal Pradesh, Assam, Sikkim, and Manipur took institutional credit during that year. In many major states the incidences of formal borrowing remained in single digit. Only in Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, and Telangana, more than half of the marginal and small farmers could avail institutional loan in 2012-13. The situation since then has not improved substantially as revealed by NABARD All India Rural Financial Inclusion Survey 2016-17.

Table 3: Borrowing status of marginal and small farmers (<2ha) from formal sources

		% Share of states in	
States	**% of farmers borrowing from formal sources**	**Amount borrowed**	**Borrowing households**
Andhra Pradesh	68.77	8.35	3.53
Arunachal Pradesh	5.40	0.02	0.10
Assam	5.82	0.81	4.04
Bihar	13.49	4.04	8.70
Chhattisgarh	14.37	1.35	2.72
Gujarat	21.97	3.06	4.05
Haryana	29.59	1.49	1.46
Himachal Pradesh	21.89	0.82	1.09
Jammu & Kashmir	8.88	0.43	1.40
Jharkhand	8.82	0.83	2.74
Karnataka	57.18	8.36	4.24
Kerala	73.05	4.32	1.72
Madhya Pradesh	20.81	4.29	5.98
Maharashtra	36.85	8.58	6.76
Manipur	5.78	0.04	0.21
Meghalaya	0.66	0.01	0.40
Mizoram	0.81	0.00	0.09
Nagaland	0.15	0.00	0.29
Odisha	31.53	5.92	5.45
Punjab	25.74	1.18	1.33
Rajasthan	27.01	5.68	6.11
Sikkim	3.28	0.01	0.08
Tamil Nadu	60.13	7.62	3.68
Telangana	73.01	6.13	2.44
Tripura	15.18	0.16	0.30
Uttar Pradesh	22.53	16.81	21.67
Uttaranchal	29.66	1.34	1.31
West Bengal	30.02	8.25	7.98
Group of UTs	21.98	0.10	0.14
All India	29.04	100.00	100.00

Source: Situation Assessment Survey, 2013-14

5. EFFICACY OF LOAN WAIVER SCHEMES

Much of the research on effect of agricultural credit on households in India, focuses on access to credit (Kumar *et. al*., 2007, Kumar *et. al*., 2015) and the effect of bank expansion in India (Burgess *et. al*., 2005). A second strand of literature looks at the impact of formal credit on economic well-being of agricultural households (Binswanger and Khandeker, 1995, Burgess and Pande, 2005; Das *et. al*., 2009; Subbarao, 2012, Narayanan, 2016, and Kumar *et. al*., 2017). Besides this, there is a strand of literature that studies the impact of Government interventions in the financial markets through loan waiver programs. While large-scale loan waivers have emerged as an overly popular policy, very few scholars have tried to understand its implications at the household level. Although these policies are widely driven by political economy motive of vote maximisation (Cole, 2009), they are important economic interventions putting a significant strain on financial resources of the country.

The Agricultural Debt Waiver and Debt Relief Scheme (ADWDRS) – the biggest loan waiver scheme, was announced by the Union Government on 29 February 2008 by Mr. P. Chidambaram, the then Finance Minister of India. It was a relief package for farmers across India, which included complete and partial waiver of loans given to small and marginal farmers. The program cost the Government Rs 71680 crore which was approximately 1.3% of the country's GDP (De and Tantri, 2014). Kanz (2012) evaluated the program based on a survey data of the households that received full, partial and/or no waiver. He found that the 2008 debt relief program failed to improve upon the policy targets of investment and productivity of households. De and Tantri (2014) also used extensive empirical tests using data of 16000 agricultural loan accounts from the year 2005-2012, spread over 4 districts in the State of Andhra Pradesh, to study the effect of the ADWDRS program on the post-waiver debt repayment behaviour of borrowers and creditors in rural credit markets. They found that the number of days taken to repay a loan after the loan waiver was announced increased for all classes of borrowers, those that received full waiver, those that received partial waiver and even for those who received no waiver at all indicating increase in the moral hazard in the behaviour of people in anticipation of a further loan waiver. They also found that access to formal finance for low income households declined after the unconditional debt relief.

Gine and Kanz (2014) also indicated that the debt relief had no positive impact on productivity, consumption or labour market outcomes, but led to significant moral hazard in loan repayment. Even the productive farmers who can pay off their loan deliberately defaulted. Rath (2008) pointed out that those farmers who had already paid their loan before the announcement of loan waivers, felt cheated and, therefore, were not willing to repay fresh loan. Many farmers believe that such write off will be announced frequently, and, therefore are reluctant to repay the loan. Evidence suggests that quite often small farmers use the money saved from loan waivers for conspicuous consumption instead of using it as an investment to augment farm productivity. Chakrabati and Gupta (2017) while analysing the impact of *Rin Mafi Yojana* in UP, suggest that in expectation of loan waiver, households make unproductive expenditures and avoid loan repayment, which are indicative of moral hazards. Further they did not find any significant productivity enhancement in response to the loan waiver program. However, Mukherjee, *et. al.*, (2014) differentiated the impact of loan waivers on distressed and non-distressed borrowers. Their research showed that waivers had a positive effect on the loan performance of distressed beneficiaries but no effect on non-distressed beneficiaries. Further, they found that loan waivers lead to rationing of future credit by banks to the non-distressed borrowers. Vaidyanathan (2008) and Rath (2008) also opined that the policy works as a temporary palliative to the debt stress faced by farmers but will not have a long-term impact on improving their living conditions. It can be seen from the above discussion that majority of the studies do not portray an encouraging picture of the loan waiver policy.

6. LOAN WAIVING VERSUS DIRECT INCOME SUPPORT

As mentioned in earlier section, the loan waiving schemes are not inclusive. As per NABARD's financial inclusion survey (NAFIS), between July 2015 and June 2016, 43.5 percent of all agri-households (agri-HHs) took loans. Of these, 69.7 percent took loans from institutional sources, of which 60.5% took only institutional loans and 9.2% from both institutional and non-institutional loans). This implies that that only about 30 percent Indian agri-HHs took loans from institutional agencies. A loan-waiver is, thus, expected to benefit only these 30 percent, or an even smaller subset of it, if certain eligibility criteria are imposed on loan waiver schemes. The remaining 70 percent of the Indian farming community, which did not have access to institutional credit, will be left out from the benefit from this scheme. Such high rates of exclusion from the welfare measures of the Government do not augur well for the inclusive and sustainable growth of Indian agriculture. Such exclusion is the most important failure of our avowed objective of promoting financial inclusion in the country. In this context, the provision of direct income support to farmers seems to be a relatively better option than resorting to loan waiving. Though, direct income support may not be able to encourage farmers to raise production, but it has several advantageous features. Direct income support has wider coverage with no leakage (or minimum) as benefits are transferred directly. It also provides protection to farmers against income loss and adverse terms of trade. The scheme is less distortionary and compatible with the WTO provisions of Green Box support as the direct income support does not influence production and prices substantially. Further, farm income support is crop neutral and the farmer is getting rewarded for continuing with agriculture irrespective of his crop choices. Such flexibilities can promote agricultural diversification in the long-run and can be helpful in correcting the policy biases introduced in the Indian agriculture. However, the fiscal cost of implementing such schemes is big in the long run and the continuation of the scheme may not be sustainable.

7. RECOMMENDATIONS

Several policy options and strategies were discussed to support the farmers and ensure sustainable inclusive agricultural growth in India. Important recommendations, which emerged during the deliberations, are given below;

- differentiated strategies to be evolved to cater to the needs of different categories and regions of farmers

- strengths, weaknesses, opportunities, benefits and threats need to be clearly analysed before announcing the loan waiver schemes
- route of loan waiving should be exercised very cautiously, and it may be announced only in case of a really distressed situation
- emphases on assured markets, prices and risk aversion plans are must
- direct income support is a better option, but adequate preparation is needed to ensure its efficiency and effectiveness
- direct income support should not come at the cost of long-term investment in agriculture and therefore a fine balance between short term and long-term measures is required
- more emphasis is required on market driven agricultural technologies for higher farmers' income
- structural reforms in land, labour, credit and commodity (inputs and outputs) markets are required for long term sustainable agricultural growth
- empirical evidence suggests that popular measures such as loan waiving schemes are not feasible economically, therefore, we must desist from announcing such measures.

REFERENCES

Awotide, B.A., Abdoulaye, T., Alene, A., and Manyong, V.M., 2015. Impact of access to credit on agricultural productivity: evidence from smallholder cassava farmers in Nigeria. In: Paper Presented at the *International Conference of Agricultural Economists (ICAE)*, Milan, Italy, August 9–14. pp. 2015.

Bathla, S., Kumar, A., and Joshi, P.K. 2018. Regional income inequalities and public investments in rural India. *Agricultural Economics Research Review*, 31(1): 13-27.

Binswanger, H.P., and Khandker, S., 1995. The impact of formal finance on rural economy of India. *Journal of Development Studies*, 32 (2), 1995.

Burgess, R., and Pande, R., 2005. Do rural banks matter? Evidence from the Indian social banking experiment. *American Economic Review,* 95 (3), 780–795.

Burgess, R., Pande, R., and Wong, G. 2005. Banking for the poor: Evidence from India. *Journal of the European Economic Association*, 3(2-3): 268–278.

Carter, M.R., 1989. The impact of credit on peasant productivity and differentiation in Nicaragua. *Journal of Development Economics,* 31 (1), 13–36.

Carter, M. R., and K. D. Wiebe. 1990. Access to capital and its impact on agrarian structure and productivity in Kenya. *American Journal of Agricultural Economics,* 72 (5): 1146-1150.

Chakrabati, T., and Gupta, A. (2017). Loan repayment behaviour of farmers: Analysing Indian households. *IIT Kanpur Working Paper.*

Cole, S., 2009. Fixing market failures or fixing elections? agricultural credit in India. *American Economic Journal: Applied Economics*, 1(1):219–250.

Coleman, B.E., 1999. The impact of group lending in northeast Thailand. *Journal of Development Economics*, 60 (1), 105–141.

Das, A., Senapati, M., and John, J., 2009. Impact of agricultural credit on agriculture production: an empirical analysis in India. *Reserve Bank of India Occas. Pap*., 30 (Monsoon (2).

De, S., and Tantri, P.L. 2014. Borrowing culture and debt relief: Evidence from a policy experiment (February 15, 2014). 2014. URL http://ssrn.com/abstract=2396368.

Diagne, A., Zeller, M., and Sharma, M., 2000. Empirical measurements of households' access to credit and credit constraints in developing countries: methodological issues and evidence. Food Consumption and Nutrition Division (FCND) Discussion Paper 90., *International Food Policy Research Institute (IFPRI).*

Feder, G., Lau, L.J., Lin, J.Y., and Luo, X., 1990. The relationship between credit and productivity in Chinese agriculture: a microeconomic model of disequilibrium. *American Journal of Agricultural Economics,* 72 (5), 1151–1157.

Ghosh, D.N., 2005. A policy approach for agricultural lending. *Economic and Political Weekly,* 40 (2), 93–96.

Gine, X., and Kanz, M. 2014. The economic effects of a borrower bailout: evidence from an emerging market. *World Bank Policy Research Working Paper*, (7109).

Golait, R., 2007. Current issues in agriculture credit in India: an assessment. *Reserve Bank of India Occas. Pap.,* 28 (1), 79–100.

Hoda, A., and Terway, P., 2015. Credit policy for agriculture in India – An Evaluation. *Indian Council for Research on International Economic Relations*, Working Paper 302 June 2015.

Kanz. M., 2012. What does debt relief do for development? Evidence from India's Bailout Program for Highly-Indebted Rural Households (November 1, 2012)., *World Bank Policy Research Working Paper,* (6258).

Khandker, S.R.,and Faruqee, R.R., 2003. The impact of farm credit in Pakistan. *Agricultural Economics*, 28, 197–213.

Kumar, Anjani, Singh, Dhiraj, K., and Kumar, Prabhat, 2007. Performance of rural credit and factors affecting the choice of credit sources. *Indian Journal of Agricultural Economics*, 62 (3), 297–313.

Kumar, Anjani, Singh, K.M., and Sinha, Shradhanjali, 2010. Institutional credit to agriculture sector in India: status, performance and determinants. *Agricultural Economics Research Review*, 23 (2), 253–264.

Kumar, Anjani, Singh, R.K.P., Shivjee, Chand, Subhash, Tripathi, Gaurav, Saroj, and Sunil, 2015. Dynamics of access to rural credit in India: patterns and determinants. *Agricultural Economics Research Review,* 28, 151–166 (Conf.).

Kumar, A., Mishra, A. K., Saroj, S. and Joshi, P. K.. 2017. Institutional versus non-institutional credit to agricultural households in India: Evidence on impact from a National Farmers' Survey." *Economic Systems,* 41: 420–432.

Mohan, R., 2006. Agricultural credit in India status, issues and future agenda. *Economic and Political Weekly,* 41 (11), 1013–1021.

Mukherjee, S., Subramanian, K., and Tantri, P. 2014. Costs and benefits of debt moratoria: Evidence from a natural experiment in India., *Indian School of Business Working Paper.*

Narayanan, Sudha, 2016. The productivity of agricultural credit in India. *Agricultural Economics,* 47, 1–11.

Phadnis, A. and Gupta, A. 2017. The politics of farm loan waivers: A Comparative study, Draft Version.

Pitt, M.M., and Khandker, S.R., 1996. Household and Intra-household Impact of the Grameen Bank and Similar Targeted Credit Programs in Bangladesh. *World Bank Discussion Paper* No. 320, Washington DC.

Pitt, M.M., and Khandker, S.R., 1998. The impact of group-based credit programs on poor households in Bangladesh: does the gender of participants matter? *Journal of Political Economics,* 106 (October (5)), 958–996.

Rath, N. 2008. Implications of the loan waiver for rural credit institutions. *Economic and Political Weekly.*, 43(24), 13-26.

Subbarao, D., 2012. Agricultural Credit: Accomplishments and Challenges. *Speech delivered at NABARD,* July 12, 2012.

Vaidyanathan, A. 2008. Farm loan waiver: a closer look and critique. *The Hindu*, 11.

LIST OF PARTICIPANTS

1. Prof Panjab Singh, President, NAAS, New Delhi
2. Dr R.B. Singh, Former President, NAAS, New Delhi
3. Dr Anil K. Singh, Secretary, NAAS, New Delhi
4. Dr Kusumakar Sharma, Editor, NAAS, New Delhi
5. Dr P.K. Joshi, Former Director - South Asia, IFPRI, New Delhi
6. Dr Anjani Kumar, Research Fellow, IFPRI, NASC Complex, New Delhi
7. Dr S.J. Balaji, Scientist, ICAR-NIAP, New Delhi
8. Dr Seema Bathla, Professor, CSRD, JNU, New Delhi
9. Dr P.S. Birthal, ICAR National Professor, ICAR-NAIP, New Delhi
10. Dr Tanika Chakraborty, Assistant Professor, IIM, Calcutta
11. Shri Ajay Vir Jakhar, Chairman, Bharat Krishak Samaj, New Delhi
12. Dr Shiv Kumar, Principal Scientist, ICAR-NIAP, New Delhi
13. Dr Sant Kumar, Principal Scientist, ICAR-NIAP, New Delhi
14. Dr Vinayak Nikam, Scientist, ICAR-NIAP, New Delhi
15. Dr A K Padhee, Director, ICRISAT, New Delhi
16. Dr Suresh Pal, Director, ICAR-NIAP, New Delhi
17. Shri Tushar Pandey, Independent Consultant, ATS One, Hamlet, Noida
18. Ms Deepa S. Raj, Director, Department of Economic & Policy Research, RBI, Chennai
19. Dr N. Chandra Sekhara Rao, Professor, Institute of Economic Growth, New Delhi
20. Dr A. Amarender Reddy, Principal Scientist (Agril Eco.), ICAR-CRIDA, Hyderabad
21. Dr Vijay Sardana, Head, Food and Agri. Business, UPL Group, New Delhi
22. Dr Prem Vashishtha, Prof. Emeritus, School of Business Studies, Sharda University, Greater Noida, UP
23. Dr S.K. Srivastava, Sr. Scientist, ICAR-NIAP, New Delhi

Note: The designations and affiliations of the participants are as on the date of BSS.

54. Integration of Millets in Fortifed Foods -2012
55. Fighting Child Malnutrition -2012
56. Sustaining Agricultural Productivity through Integrated Soil Management - 2012
57. Value Added Fertilizers and Site Specifc Nutrient Management (SSNM) - 2012
58. Management of Crop Residues in the Context of Conservation Agriculture - 2012
59. Livestock Infertility and its Management - 2013
60. Water Use Potential of Flood-afected and Drought-prone Areas of Eastern India - 2013
61. Mastitis Management in Dairy Animals - 2013
62. Biopesticides – Quality Assurance - 2014
63. Nanotechnology in Agriculture: Scope and Current Relevance - 2014
64. Improving Productivity of Rice Fallows - 2014
65. Climate Resilient Agriculture in India - 2014
66. Role of Millets in Nutritional Security of India - 2014
67. Urban and Peri-urban Agriculture - 2014
68. Efcient Utilization of Phosphorus - 2014
69. Carbon Economy in Indian Agriculture - 2014
70. MOOC for Capacity Building in Indian Agriculture: Opportunities and Challenges - 2014
71. Role of Root Endophytes in Agricultural Productivity - 2014
72. Bioinformatics in Agriculture: Way Forward - 2014
73. Monitoring and Evaluation of Agricultural Research, Education and Extension for Development [AREE4D] - 2015
74. Biodrainage: An Eco-friendly Tool for Combating Waterlogging - 2015
75. Linking Farmers with Markets for Inclusive Growth in Indian Agriculture - 2015
76 Bio-fuels to Power Indian Agriculture - 2015
77. Aquaculture Certifcation in India: Criteria and Implementation Plan - 2015
78. Reservoir Fisheries Development in India: Management and Policy Options - 2016
79. Integration of Medicinal and Aromatic Crop Cultivation and Value Chain Management for Small Farmers - 2016
80. Augmenting Forage Resources in Rural India: Policy Issues and Strategies - 2016
81. Climate Resilient Livestock Production - 2016
82. Breeding Policy for Catle and Bufalo in India - 2016
83. Issues and Challenges in Shifting Cultivation and its Relevance in the Present Context - 2016
84. Practical and Afordable Approaches for Precision in Farm Equipment and Machinery - 2016
85. Hydroponic Fodder Production in India - 2017
86. Mismatch between Policies and Development Priorities in Agriculture - 2017
87. Abiotic Stress Management with Focus on Drought, Food and Hailstorm - 2017
88. Mitigation Land Degradation due to Water Erosion - 2017
89. Vertical Farming - 2019
90. Zero Budget Natural Farming - A Myth or Reality? - 2019

Status / Strategy Papers

1. Role of Social Scientists in National Agricultural Research System (NARS) - 2015
2. Towards Pulses Self-sufciency in India - 2016
3. Strategy for Transformation of Indian Agriculture and Improving Farmers Welfare - 2016
4. Sustaining Soybean Productivity and Production in India - 2017
5. Strengthening Agricultural Extension Research and Education - 2017
6. Strategy on Utilization of Glauconite Mineral as Source of Potassium - 2017
7. Vegetable Oil Economy and Production Problems in India - 2017
8. Conservation Policies for Hilsa and Mahseer - 2018
9. Accelerating Seed Delivery Systems for Priming Indian Farm Productivity Enhancement: A Strategic Viewpoint - 2018
10. Renewable Energy: A New Paradigm for Growth in Agriculture - 2018
11. Rumen Microbiome and Amelioration of Methane Production - 2019
12. Harnessing Full Potential of A1 and A2 Milk in India: An Update - 2019
13. Development and Adoption of Novel Fertilizer Materials - 2019

Policy Briefs

1. To Accelerate Utilization of GE Technology for Food & Nutrition Security and Improving Farmers' Income - 2016
2. Innovative Viable Solution to Rice Residue Burning in Rice-Wheat Cropping System through Concurrent Use of Super Straw Management System-fted Combines and Turbo Happy Seeder - 2017
3. Soil Health: New Policy Initiatives for Farmers Welfare - 2018

NAAS Documents on Policy Issues*

1. Agricultural Scientist's Perceptions on National Water Policy -1995
2. Fertilizer Policy Issues (2000-2025) -1997
3. Harnessing and Management of Water Resources for Enhancing Agricultural Production in the Eastern Region -1998
4. Conservation, Management and use of Agro-biodiversity -1998
5. Sustainable Agricultural Export -1999
6. Reorienting Land Grant System of Agricultural Education in India -1999
7. Diversifcation of Agriculture for Human Nutrition -2001
8. Sustainable Fisheries and Aquaculture for Nutritional Security -2001
9. Strategies for Agricultural Research in the North-East -2001
10. Globalization of Agriculture: R & D in India -2001
11. Empowerment of Women in Agriculture -2001
12. Sanitary and Phytosanitary Agreement of the World Trade Organization – Advantage India -2001
13. Hi-Tech Horticulture in India -2001
14. Conservation and Management of Genetic Resources of Livestock - 2001
15. Prioritization of Agricultural Research - 2001
16. Agriculture-Industry Interface: Value Added Farm Products -2002
17. Scientists' Views on Good Governance of An Agricultural Research Organization -2002
18. Agricultural Policy: Redesigning R & D to Achieve It's Objectives -2002
19. Intellectual Property Rights in Agriculture -2003
20. Dichotomy Between Grain Surplus and Widespread Endemic Hunger -2003
21. Priorities of Research and Human Resource Development in Fisheries Biotechnology -2003
22. Seaweed Cultivation and Utilization -2003
23. Export Potential of Dairy Products -2003
24. Biosafety of Transgenic Rice -2003
25. Stakeholders' Perceptions On Employment Oriented Agricultural Education -2004
26. Peri-Urban Vegetable Cultivation in the NCR Delhi -2004
27. Disaster Management in Agriculture -2004
28. Impact of Inter River Basin Linkages on Fisheries -2004
29. Transgenic Crops and Biosafety Issues Related to Their Commercialization In India -2004
30. Organic Farming: Approaches and Possibilities in the Context of Indian Agriculture -2005
31. Redefning Agricultural Education and Extension System in Changed Scenario -2005
32. Emerging Issues in Water Management – The Question of Ownership -2005
33. Policy Options for Efcient Nitrogen Use - 2005
34. Guidelines for Improving the Quality of Indian Journals & Professional Societies in Agriculture and Allied Sciences -2006
35. Low and Declining Crop Response to Fertilizers - 2006
36. Belowground Biodiversity in Relation to Cropping Systems - 2006
37. Employment Opportunities in Farm and Non-Farm Sectors Through Technological Interventions with Emphasis on Primary Value Addition - 2006
38. WTO and Indian Agriculture: Implications for Policy and R&D -2006
39. Innovations in Rural Institutions: Driver for Agricultural Prosperity -2007
40. High Value Agriculture in India: Prospects and Policies -2008
41. Sustainable Energy for Rural India -2008
42. Crop Response and Nutrient Ratio -2009
43. Antibiotics in Manure and Soil – A Grave Threat to Human and Animal Health -2010
44. Plant Quarantine including Internal Quarantine Strategies in View of Onslaught of Diseases and Insect Pests -2010
45. Agrochemicals Management: Issues and Strategies -2010
46. Veterinary Vaccines and Diagnostics -2010
47. Protected Agriculture in North-West Himalayas -2010
48. Exploring Untapped Potential of Acid Soils of India -2010
49. Agricultural Waste Management -2010
50. Drought Preparedness and Mitigation -2011
51. Carrying Capacity of Indian Agriculture - 2011
52. Biosafety Assurance for GM food Crops in India -2011
53. Ecolabelling and Certifcation in Capture Fisheries and Aquaculture -2012

For details visit web site: http://www.naasindia.org

Continued on inside cover