

## **PRESIDENTIAL ADDRESS**

### **State, Agriculture and Policymaking\***

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While I stand at this coveted podium to deliver this prestigious ISAE Platinum Jubilee presidential address, my memory goes back to the great stalwarts who have earlier delivered many thoughtful presidential addresses from this podium over the last 74 years. They were the sculptors par excellence and had provided every time a new jewel to bring us to this enviable destination. Each one of them had given his best masterstroke. Today, I remember many of them from almost 1974, the year in which I started participating in the conferences of the society. Each one of these stalwarts had put his heart in constructing every brick of this huge structure and I reminisce specifically Professors Dantwala, V.K.R.V. Rao, V.M. Dandekar, Nilkantha Rath, Vaidyanathan, V.M. Rao, M.V. Nadkarni, N.A. Mujumdar, S.S. Johl, Karam Singh, C. Ramasamy and many others. We did have influences from foreign groups and individuals, both in respect of academic disciplines and matters of understanding Indian agriculture but we honoured them. The members of ISAE have contributed to the build of the society to a great extent and therefore I recollect what the father of our nation wrote about external influences. He said *"I do not want my house to be walled-in on all sides and my windows to be stuffed. I want the culture of all lands to be blown about my house as freely as possible. But I refuse to be blown off my feet by any of them"*. I remain deeply influenced by this. I have no qualms to state that I am here today not because of my miniscule academic standing, I have no such hazy illusions, but I am here to bring that indigenous element vehemently in to our thinking. I am here only by default and this coveted position should have been occupied by someone out there who has slogged untiringly for elevating high the agricultural economists' profession of the country. On behalf of you all I bow with greatest respect to those stalwarts, past and present, and pay my respects to them, while thanking them profusely for their efforts.

Indian Society of Agricultural Economics has completed 75 eventful years today and is going very strong. Our Journal is one of the foremost academic Journals and has maintained the highest standard over time. A quick perusal of the writings in the journal gives a glimpse in to the movement of agricultural economics in the country. Prof Mruthyunjaya, in his excellent presidential address to Agricultural Economics Research Association's annual conference, surmised about the content and direction of research in agricultural economics (Mruthyunjaya, 2015). He has very clearly articulated his concerns pertaining to social science fatigue in agricultural universities, especially as reflected in declining staff, inbreeding, time allocation and research areas. Lack of critical mass and coupled with many usual ailments like resource availability, standard of publications and aping the styles of researches, have together

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I must express my deep sense of gratitude to the members of ISAE, its President Prof Ramasamy and all my friends who thought that I should shoulder this responsibility. My academic career was shaped largely by Prof. Nadkarni, Prof V.M. Rao and many of my friends and critics, but for them I would not have climbed these steps. I am indebted to them all. I express earnest gratitude to my friends Chandrakanth, Khalil, Jagdale and Manjunath for their support.

contributed to a sorry state of affairs. There are a large number of sub-standard journals and publishers who dish out publications at affordable prices and within a short time to suit the career policies. Professor Mruthyunajaya's analysis of the publications in agricultural economics indicates that the researchers in agricultural economics have principally focused on crop science/production economics. He locates the concentration of researchers in agricultural economics a few areas with no new methodological innovations. I made an attempt to go through quite a few articles to locate something new or incremental knowledge, but I was not quite successful. Rather I was surprised to find that many of the researchers had resorted to plugging in the data into formulae/models for obtaining the results through computers. These are seldom spiked with any outstanding interpretations. I may not be wrong if I state that we have reduced agricultural economics to some computations through software, production economics, and some mathematical jugglery, stretching it away in the process, from the farm, farmer welfare and development in general. We need to convincingly change that, and responsibility is on the shoulders of the senior researchers. I join Professor Mruthyunajaya in that disdain and also the feeling that we have to pull up our socks to be able to come up with new methodologies, new interpretations and incremental knowledge besides contributing strongly to the ongoing policy debates, so that we are reckoned with. It is important to keep in view that agricultural economics is not just applications of micro-economics or Neo-classical economics to agriculture or a bundle of equations rather it is an inter-disciplinary perspective of agriculture aimed at the farmer welfare as the centrifugal issue. Over these years, we have probably become more mechanical than analytically interpretative; the warning bells of the farm sector distress are already thundering and we cannot remain mute to these issues. I must mention with great humility and gratitude that it was Late Professor V.M. Rao who suggested me to get on to this theme, which is quite different from the usual themes. We have had some discussion on this and I must remember him for the provocation. Against this backdrop, I am going to speak differently away from the maze of equations and formulae.

Agricultural policy and inter-disciplinarity in understanding the policy interventions have stayed out on the margins of analysts. Indian agriculture/ agriculturist today even after more than six decades of state interventions and policy making, demands a respectable place. This raises a question about the effectiveness of the state in dealing with distress situations with a far reaching policy view. I have selected this area of "State, Agriculture and Policy making", from the perspective of today's need to rethink and churn the most critical inter-disciplinary issues confronted by Indian agriculture that have continued to evade, but should attract our attention. These are:

- Have the State interventions in agriculture been too overbearing?
- Is the State serious enough to understand, appreciate and responsive to the problems acutely confronted by Indian agriculture?
- Why there is always a proverbial gap between the assured yield by technology and what is actually obtained on farmers' field?
- Why is the Indian agriculture not breaking the imaginary growth barrier?
- Are the policies framed or interventions introduced, ineffective in dealing with the issues?
- Is the academic writing on Policy serious about sensitive online corrections?
- What has gone wrong with the agricultural policy making, were the experiments carried out serious enough to come up with long term solutions?

These questions confront us day in and day out and we are always happy with the fragmentary answers that satisfy our childlike curiosities, but never take us closer to a truth in that context. Here I recollect what Professor Dantwala wrote in 1991 “*As an emergency induced short-term strategy in the context of successive below normal performance of foodgrains production, the strategy of concentration on ‘selected’ regions for capitalisation of their growth potential, can be justified. But a sustained long-term policy will have to pay equal, if not greater attention to the backward regions where poverty and unemployment are more acute and pervasive. If they are deficient in growth potential, this will have to be built up over a period of time*”, (Dantwala, 1991, pp 13).

We can only shrug and throw our hands up saying that we are not an inch away from the position prevailing then. I am taking up these questions more at the discussion level and shall try to bring forth a few tentative pointers to reach plausible solutions. But I do not have the arrogance to say that I have a magic wand, but it is not prohibited to give a try and hence this attempt.

## I

### STATE AND AGRICULTURE

#### 1.1 *State and Agriculture in British India*

In the Pre-British period, Indian state had only a fragmented existence of many provincial powers and hardly any uniting force. As Baden Powel put it in his books on ‘*Land-systems of British India*’ (1892), and ‘*Indian Village Community*’ (1896), the State derived its power through a land revenue system in India that differed across the provinces showing a clear and free mandate to the provincial feudal system. It was a means of keeping a hold on the provincial Governments and thereby consolidating the power. The land tenure and the land revenue system had its roots in the Moghul rulers’ painstaking work. Eric Stokes writes about the land issue “Certainly British legal forms brusquely compressed the overlapping complex gradations of rural society into crude categories of landlord, tenant and labourers” (Stokes, 1978, pp.2). As Baden Powel (1892), puts it agriculture was an inclusive village activity and the state had only revenue collection link with the farmer. The crop choice, technology and adjustments were within the village activities. Further, as described by Luke Scrafton in his important contribution entitled “Reflections on the Government of Indostan ....”, organisation of agriculture was free of State’s stronghold. The land revenue system dominated the entire decision making on behalf of the state and there was no role for the state in any other field. The providing of water, grain storages, village markets as also the village irrigation system was managed at the village level, with little intervention by the state or even the feudal powers. The productivity was quite comparable internationally and crop diversification was prevalent.

Indian state came into being only after the Battle of *Plassey* under the East India Company and it is only after the first war of Independence in 1857 that the British consolidated their stronghold on the country (June 28th 1858). Agriculture as an economic activity was taken as a source of resource both for revenue generation and feed as also other commodities for trade like Plantations of Tea, Coffee, rubber and cultivation of Indigo. The interest of the Colonial rulers in agriculture from these two standpoints is quite clear in the history namely the generation of revenue through land taxes and generating trade oriented commodities. The Indigo revolt against British planters led by Bishnucharan and Digambar

Biswas reflected the farmers' voice against dictating the crop pattern that was planned to fuel trade without ploughing back the surpluses. M.G. Ranade in his lectures during 1873, while analysing the flow of trade to U.K. and other countries during 1858 to 1872, estimated the total export value at Rs 686 crores (then @ current prices). Most of the commodities traded out were agricultural produce. Lord Mayo's role was quite prominent in cotton trade from British India as the then government focused on trade of agricultural raw material. It is clear that the personality of the State was that of an exploitative power and naturally it should have been nothing other than that. After all, the British had no philanthropic pursuits while ruling over India.

The first war of independence in 1857 changed the circumstances significantly. It was very clear to the colonial rulers that the route of consolidation of power in India had to be through agriculture as that was the dominant economic activity in the country then. British Indian state had a transformation of its personality inching towards a benevolent kingdom (*Ma-Bap Sarkar*). The process of governmentisation of a village bounded activity began with the formation of Department of Revenue and Agriculture and Commerce in 1871. Until then, agriculture was under the Home Department but it started as a separate Department jointly with Commerce. Dandekar, while analysing the development of agricultural administration under the British rule, quotes Hunter as "In 1869 Lord Mayo, then Viceroy of India, wrote to the Governor of Madras: 'I really think that the time is come when we ought to start something like an agriculture department in the Government of India with branches in the presidencies .... Agriculture, on which everyone here depends, is almost entirely neglected by the Government'" (Hunter, 1875, pp.319-29).

The famines of 1880, 1898 and 1900 devastated the countryside with agriculture being under a great stress. Deccan riots had awakened the farmers and conditions of an armed movement were quite visible. The Deccan Riots Enquiry Committee was appointed in 1876 to pacify the *Ryots* in the Deccan. Given the volatile situation in the country and the emergence of freedom movement, British Government considered it imperative to appoint Famine Commissions of 1880 and 1898 to establish an image of a benevolent state. The recommendations of the Famine Commission of 1880, assigning responsibilities to the provincial Governments were quite important for the organisation and also for strengthening the State control on agriculture. These included: to collect and collate agricultural information; undertake steps towards famine prevention; and organise Famine relief. The Department of agriculture was formed in 1881-82. An Agricultural School was started at Sadapet in Madras province. Followed by these, an Inspector General of agriculture was appointed in 1901 and colleges of agriculture as also research started in Pune, Kanpur, Sabour, Nagpur and Lylapur (Pak) by 1905. The first irrigation Commission Report and the Reports of the Royal Commission on Agriculture (RCA) (Linlithgow Commission, 1926-28), Imperial Commission on Agricultural Research were strong attempts to convince the natives as also their leaders in to believing that British Government was farmer-friendly and that agriculture as the major economic activity would be the priority of the British Government. The RCA proposed an Imperial Council of Agricultural Research and opined firmly that a central organisation was to play a significant role in the field of agricultural research. RCA recommendations were taken up for implementation with an inaugural meeting held on 21<sup>st</sup>-22<sup>nd</sup> June 1929, thereby consolidating the Central government's role in deciding priorities in agriculture. These administrative steps did not recognise the regional and provincial needs nor did they have any Federal structure. In 1944, the advisory board of the Imperial Council of

Agricultural Research submitted a Memorandum pleading for a Federal character of the Council. Dandekar (1994, p.135 and 203), after reviewing the entire history of agricultural administration, came to, two overt and one inherent conclusions. He observed an increasing centrist role in agricultural administration and a greater reliance on science and technology as a strategy with a significant wastage of energies as the spread of innovations was not dense enough. The inherent theme that Dandekar did not overtly argued was the continuity of the colonial approach of an overbearing State power on the farmers towards agricultural policy. As Kalyan Sanyal conceptualised governmentality on the lines of Foucault's analysis of diachronic account of power and clarifies it as "Governmentality, on the other hand, refers to the management of the social boy in terms of interventions on the part of the state aimed at promoting the welfare of the society" (Sanyal, 2014, p.171). He elaborated on the two paradigms of power namely, sovereignty and governmentality one which was repressive and the other productive but both strong interventionists. The British rule transformed the Indian state to be modelled on these two power concepts of sovereignty and governmentality. After Independence, however, the Indian State power moved away from sovereignty, but went faster on increasing governmentality. The presence of the State and state directives have been all prevailing and strongly even in the field of innovations in terms of directing scientific research in Universities/Institutions. The political-economic situation changed substantially over the sixty eight years, but the changes though not directly connected to the agricultural sector have led to substantial changes in the sector through state interventions. We shall examine as to how the personality of the State was formed and the way policy interventions in the farm sector came into being from the standpoint of governmentality.

### *1.2 Personality of the Indian State after Independence*

The personality of young Indian state began getting formed under the strong influence of colonial structure. One must never forget the fact that the Indian state was formed under the shadow of a strong colonial state power and inadvertently modelled on the lines of the British state. Brass (1990), while analysing the politics of India under the Cambridge History of India series remarked "*It was commonly remarked at Independence that Indian leaders were bent upon adopting the political conventions, ideas and practices of Western democratic societies...*" (Brass, 1990, p.13). Colonial rulers gave us the State predominance and governmentality as the driving forces of the agricultural sector. The new State power had to live with the image of a benevolent state under the new democratic organisation and slowly turned as an interventionist with a "know all" paradigm. Marx called the Indian state foundation as 'oriental despotism' albeit with *democracy* was superimposed on it. (Marx reprinted in Macfie (2000)). In the following years, democracy followed its own path in India with the analysts of the Indian State indicating at interesting shades of the personality of the State (Das, 2013), in terms of largely neglecting the class and agrarian dimensions of the state. On the side of researchers, with the waning of the interest in Marxian analysis as a strong theoretical approach to the problems of the society, economists were left with a mechanical framework that rested only on the mechanical computations of data churned out by the imperfect data collating agencies. Especially agricultural economists turned away from the historical analytics of the State as it did not fit in with any of the quantitative modelled phenomena. On the other side, the State had its increasing overbearing presence in deciding the path and policy for the development of the agricultural sector.

The genesis again goes back to the acceptance of the Voelcker report and the resolution of the Government dated June 22nd 1893 that appointed Agricultural Chemists as advisers to the provincial governments. Interestingly the Report of the Famine Commission 1901 quoted by Dandekar is worth mentioning here: “ We are indeed, far from thinking that the Indian cultivator is ignorant of agriculture; in the mere practice of cultivation, Agriculture Departments have much to learn from the cultivators” (Dandekar, 1994 p.129 a quote from Famine Commission 1901: p.112). Agricultural research institute was established at Pusa in 1904, and in 1905 took the steps to establish Agricultural Colleges in the country. The Imperial Council of Agricultural Research began in 1928 with many disciplines having their own branches under that. The submission to the Government by the Advisory Board of the Imperial Council of Agricultural Research in 1944, strongly recommended that given *the wide diversities in agro-climatic conditions, a detailed planning be carried out by the provincial governments* and that a *Federal Department of Agriculture* be created. (Dandekar, 1994, p.135). I know I have repeated the point of the Federal structure as in the earlier section, but that is the crux of the formation of our agricultural strategy and the influence of the colonial State on the agricultural development.

It was on this stage that the personality of the Indian State was getting moulded. Polity, bureaucracy, ideology and policy thinking elsewhere in the world were the major tools in such a moulding. The making of the State policy was a tight rope walk between centralised planning on the one hand and development of markets and production of goods and services compatible with the world on the other. It was on this canvass the polity of the country was getting moulded (Chakrabarty and Pandey, 2008). Indian State with agriculture as its mainstay of livelihood, was stretched in its policy formulation on both sides. Its implications for agriculture were certainly important and far reaching. James Manor (1990) explains Indian state in terms of two important ingredients, namely, the institution of the State and its agrarian social order. I consider that the state power deciding predominantly the path of the agrarian social change and what the ‘farmer should do’, is probably an unwarranted interventionist policy. The development of the State power and the resultant hold on deciding what the ‘farmer’ should do actually dates back to the Royal Commission on Agriculture and the Famine Commission Reports, if looked carefully through the pages of history, that tradition continued and enhanced in the democratic set-up of the new law makers.

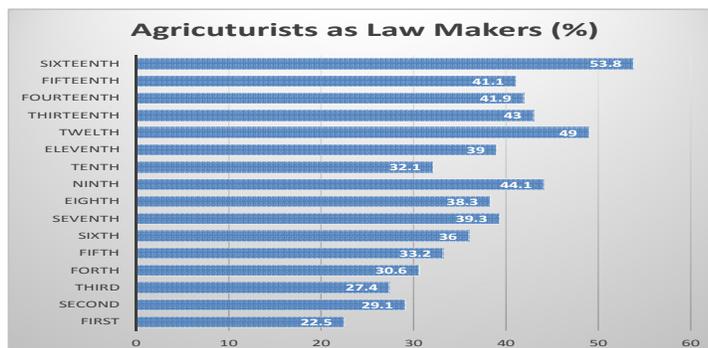
The overarching role of the State as the only saviour of the farmer became stronger and its moderations in both factor and product markets made the farmer dependent on the market intermediaries (Rahman, 2008). In the factor market, the prices of fertilisers, pesticides, supply and choice of seeds, supply and price of electricity and water came to be strongly under the State control. Due to the lack of efficiency on the part of the State, these factors contributed to an increase in the cost of cultivation. Whereas, in the product market the State enacted Market Regulation Law made the farmer to sell the produce only in the organised markets and indirectly facilitated the intermediaries to make the best out of the imperfect marketing operations. Therefore, the interventions have to be efficient attempting to enhance farmers’ welfare. The imperfect and overarching presence of the State in both the markets is actually welfare deteriorating.

Personality of the State as described by political scientists is largely represented by the lawmakers, bureaucrats and the lobbyists, who manoeuvre the policy. Kumar (2013, p.3) gave five overlapping perspectives to understand the personality of the State namely: Institutional, pluralistic, Marxian, Cultural and Political economic, which could be fused into two namely

‘institutional and ideological’. Democracy as a product of our constitutional promise, was getting deeply rooted but largely spearheaded by the electioneering in shaping the personality of the state. Interestingly, Jalal (1995) makes a point that Indian state is democratic as also veiled authoritarian through the power of its bureaucratic instruments, a bequest from the colonial administrative structure. The state power has always been represented by the industrial bourgeoisie, the dominant agrarian class and the cultured academia along with an ‘all willing bureaucracy’ (Kumar, 2011). This, in turn, has fuelled and sustained the authoritarian personality of the state appropriated by almost similar interest groups irrespective of the political party in power (Chhotray, 2012). Of course there may be a few exceptional sporadic phases herein.

The demand side analyses from the vantage point of understanding the historical formation, provide us with only a hazy picture of the State but we need to visualise that vis-a-vis farmer. Christophe Jaffrelot’s seditious volumes, while analysing the changing face of the State Assemblies followed by the volume on the Indian scenario (Jaffrelot, 2009 and 2012), and analytically putting together the entire post-Independence political development scenario, ultimately underscores the changing personality of Indian State broadly in five distinct politico-economic facets. These phases have had a telling effect on the agricultural development as political economic changes could not be insulated against the mainstay of livelihood of farmers/agri labourers in the countryside. That was actually not reflected in the composition of our public representatives.

Successive Lok Sabha elections had a differential composition of the elected Members of Parliament. Three important observations could be picked up about the composition of the successive parliament. First, the average age of the members of parliament is found fluctuating over time but has not declined over the last sixty three years. The average age of members in the First Lok Sabha was 46.5 years, while that of the 16th Lok Sabha is 53.8. There are fluctuations but the core trend is that of increasing average age that breaks the myth of younger lawmakers getting into the parliament (different issues of LARRDIS). Second, the education level of the parliamentarians has been increasing and in the sixteenth Loksabha we have 77.17 per cent members as graduates and above.



Source: Parliament of India, Fourteenth Lok Sabha: A Study, (Lok Sabha Secretariat, New Delhi, 2010). Cited in Manish (2013).

Figure 1. Agricuturists as Law/Policy Makers.

Notwithstanding the fact that many of the MPs may have questionable legal records as usually we hear from newspapers. It is argued by Kapur and Mehta (2006) that the structural

changes in Indian politics have led to an adverse self-selection that is reflected in the calibre of the persons entering the parliament. As a result, the policy suffers. The personality of the Indian State, getting formed over the years relates to the composition of law-makers elected to the parliament (Kashyap, 2000). We are moving towards a higher age group (between 45-65 yrs., a shift towards higher side of age), educated above graduate level (45-50 per cent) and hence flouting semi-urban background. High concentration of rich law makers is now anybody's knowledge and that also dictates the personality. The law makers largely have a mixed ideological following (if one considers only the left wing and capitalistic forms as two mainstream ideological traits, jacketing the others under these two broad themes). It is clear that the 'governmentality' and patronising urbane personality of the State is visible now.

The state personality thus is urbane, in the age group of around 50 years, literate but just above graduate level and not very strongly committed to any ideological platform. Bureaucracy as also lobbyists has a fairly urbane background. It is interesting to note that over the last sixteen parliamentary elections the share of agriculturists among the elected MPs has increased but the attention to the issues pertaining to the sector is found wanting. It is observed that the state sponsored schemes and programmes are being dished out without ascertaining the demand for or appropriateness of these at local levels. CAG in its report has strongly commented on a recent initiative of RKVY as "*Out of 393 projects selected in 19 sectors of the RKVY for audit examination, cases of under-performance and irregularities were noticed in 150 projects (38 per cent). The foremost reason for the underperformance could be attributed to lack of detailed planning upfront without considering the local factors*" (emphasis mine) (CAG, Press Release, May 5, 2015). It may be recalled that RKVY was conceived as a scheme that will build the policy interventions built 'bottom up' that will have a holistic and integrated approach towards agricultural sector, with new and innovative schemes. The diversity of the country was incorporated by providing flexibility to the states with State Level Sanctioning Committee, clearing the projects. We may recollect that RKVY was a policy introduced after lengthy deliberations and a few committees and commissions' reports with lofty objectives. But now at this juncture, I am convinced that the State can neither understand nor appreciate the ground level realities besides it is not serious about that, the reason being that the policies are prepared by know-all experts behind the closed doors. This however, cannot be taken as a blanket generalisation. The overbearing and patronising role is played by the State, without understanding the local conditions in a proper perspective that pushes huge resources down the drain. Under such conditions, it is difficult to expect agriculture to receive the needed push through the present policy mechanism.

## II

### FACETS OF POLITICAL-ECONOMIC CHANGES AND AGRICULTURE

The personality of the State emerging over the years has turned from core rural to semi-urban and is slowly inching towards a higher sophistication. Added to this is the patronising governmentality that runs through the policy solutions. This change has occurred despite the fact that the share of 'agriculturists' among the lawmakers has been increasing. With sixty five years of the democratic State with agriculturists as the dominant group among law makers, one can legitimately expect the problems of agriculture being confronted since the early decades to be effectively dealt with. The six decades of the changes in political economy along with the development of agricultural sector are worth reviewing. In the political

economic framework, there are not many analyses available that delineate clearly the phases of political-economy vis-a-vis the agricultural development.

TABLE 1. POLITICAL ECONOMY TRAVELOGUE OF INDIAN STATE: POST-INDEPENDENCE SCENARIO

Phase (1)	Period (2)	Political concern (3)	Economic pursuits (4)	Agriculture (5)
I	1947-59	Consolidation	Colonial hangover	Primacy to food policy
II	1960-65	Complacency	Groping for Proper developmental model	Mixed economy tangles
III	1965-68	Years of turmoil	Negotiating external and internal issues	Food and institutions
IV	1968-73	Exercising power and tech	Ideological entangles	Settling green revolution
V	1975-82	Power games	Strengthening home industry linkage	Travails of gr revolution
VI	1982-90	JP nav nirman and aftermath	Reaffirming democracy	Relative neglect of Agri
VII	1990-2001	Consolidating Pol power	Decade of swift changes	New paths, new equations
VIII	2001-14	Managing coalitions not so easy	Empowering the state	Taking on the world mkt

*Source:* Late Professor Kalyan Sanyal Memorial Lecture at Department of Economics, Kolkata University, at Kolkata, 22nd July 2015 delivered by me.

One can broadly capture this travelogue of the political economy in terms of eight phases, while avoiding the usual classifications of 'before and after'. This is done keeping in view three pointers. First, is the important events that are typical characteristics of the period; second, the political situation that branded the events (Ganguli and Mukherji, 2011) and third, the agricultural economy responses to then prevailing situations. The political situations did not dictate directly the condition of agricultural sector but it was through the instrumentation of the state that the situations were reached. The reflections of the political economy either provoked or directed the State to take steps that led to the agricultural situation. The emergence out of the colonial hang up took some time, but we kept undisturbed the agricultural administrative machinery. No substantial institutional changes were introduced except the 'Community Development' programme under the pressure of the Gandhian ideology. Food and its availability remained primary concern and hence, a relative neglect was handed over to the making of a holistic policy. The food situation was slightly getting under control by 1964 and hence 'complacency' entered the policy till we received the rude shocks of the twin drought years and the war with Pakistan. This was also the time when agricultural scientists and agricultural economists of the country took up on themselves the challenge of building a respectable agricultural sector. Scientific production augmenting innovations were only one side but the soft side of extension efforts, price policy, marketing institutions, credit policy, manufacturing of inputs, agricultural education policy were some of the critical changes that concretised the revolution. Once again the policy circles had some breathing time with the attention drifting away from agriculture to social sector (poverty issues) and industrial sector. In the process, the after-effects of technological changes started showing up. Agricultural economists started working on the deceleration hypothesis. That was also the time of political turmoil and the Nav Nirman agitation. Agricultural policy thinking took a back seat. The transport equipment absorbed the largest import bills and the economy was slowly but surely drifting towards an imminent crisis. Agriculture was neither a participating sector nor one that had attracted any attention during those years of turmoil, but

stayed as a taciturn standby. Following strong protests from the farmers' organisations against AOA under WTO and its implications for agriculture, the ending years of Nineties saw some activity on framing a long term agricultural policy. It was not even discussed by both the houses of parliament or by the politicians or the bureaucracy. It remained a document throughout the first decade of this century (now not even traceable) and then, we were provided with a voluminous National Commission on Farmers (Chairman: M.S. Swaminathan). But, this cannot be called in a true sense, a policy document as it runs into five huge volumes with quite a few suggestions being in a non-implementable domain. The shifting role of the State (policy) during these politico-economic phases cannot evade the attention of any analyst.

### III

#### STORY OF GROWTH AS A PROXY FOR POLICY SUCCESS

In agricultural economics literature, we have often analysed 'development' through its nearest proxy namely, 'growth'. It is rarely that welfare concerns got into discussion mode except when the distress struck acutely. We have often analysed the situation through changes in the rates of growth. There have been quite a few attempts earlier to understand the growth and development of Indian agriculture such as Dantwala (Eds.) (1991), Acharya and Chaudhury (2001); Alagh (1999); and Bhalla and Singh (2001). All the analysts analysed the development of agricultural sector from the perspective of growth. The long term behaviour of Indian agriculture broadly indicates that we have done fairly well as far as food availability is concerned. In the year 1951 India had food grains availability at 398 gms per person per day and that has reached to 510 gms per person per day by 2013. Food grains production which was at 51 million tonnes (1950-51) has reached to 264.8 million tonnes in 2013-14, with a yield increase from 522 kgs (1950-51) per hectare to 2101 per hectare (2013-14). The achievements look exemplary, especially when we consider the constraints involved. This of course is a statistical story that masks a lot rather than what it reveals. Recently, Deokar and Shetty (2014), analysed the performance of the Indian agriculture, especially through the performance on growth front. They conclude that Indian agriculture has done far better in the period after 2004-05 and chiefly the horticultural crops have shown significant growth potential. But that needs to be viewed on the background of the news feed on farmers' distress and suicides as also the vulnerability of the sector to weather failures.

On the face of this picture, can we reflect on the all-pervasive agrarian distress and farmer suicides? The distress is reflected in the continued reporting of suicides. Almost every day reports are pouring in about the distress as also suicides. I need not divert myself to my favourite area of analysis, but it only suffices to tell that enough policy leads are available from agricultural economists to alleviate the situation. These include a policy void, village level institutionalisation, shrinking public fund allocation and the technology fatigue. On the 'Colonial pattern of Governance' when the State assumed the responsibility of steering the agricultural sector using policy tools that failed, can we not call this a significant policy failure? Narayanamoorthy (2007) calls this as 'policy fatigue' an issue that needs to be taken seriously. The argument is: when the symptoms of the crisis are clearly visible well in advance and publicised through the media, is it not the policy maker's responsibility to take quick note of the situation and device effective measures to deal with the situation. Here we feel the necessity of an alerting or monitoring mechanism, which pre-warns about the

impeding problem. Even when the measures are under taken these are inadequate to deal with the situation and the blame is on the implementation process.

The growth story however is interesting and here we are with the usual growth performance table.

TABLE 2. GROWTH PERFORMANCE OF PRODUCTION AND AGRICULTURAL OUTPUT AND INPUT: 1950 TO 2013

Periods (1)	Production		Agriculture and allied sector GDP# (@2004-05 prices) (4)	Output and input (2004-05 constant prices)			
	Foodgrain (2)	Non- foodgrain (3)		Crop output (5)	Livestock output (6)	Agri* Inputs (7)	Net agri output** (8)
Decades							
1950s	4.25	3.66	2.71	3.06	1.42	2.00	2.91
1960s	1.85	1.49	1.51	1.70	0.41	2.34	1.25
1970s	2.07	2.17	1.74	1.79	3.92	3.27	1.88
1980s	2.73	3.77	2.97	2.24	4.91	1.96	3.11
1990s	2.09	2.67	3.34	3.02	3.79	2.58	3.40
2000-01 to 2013-14	2.52	1.18	3.41	3.17	4.52	3.46	3.57
Phases							
1950-51 to 1965-66	2.96	3.60	2.27	2.47	1.22	1.90	2.31
1966-67 to 1990-91	2.84	2.96	2.62	2.75	4.16	3.90	2.80
1991-92 to 2013-14	1.70	0.55	3.02	2.67	4.00	2.84	3.09

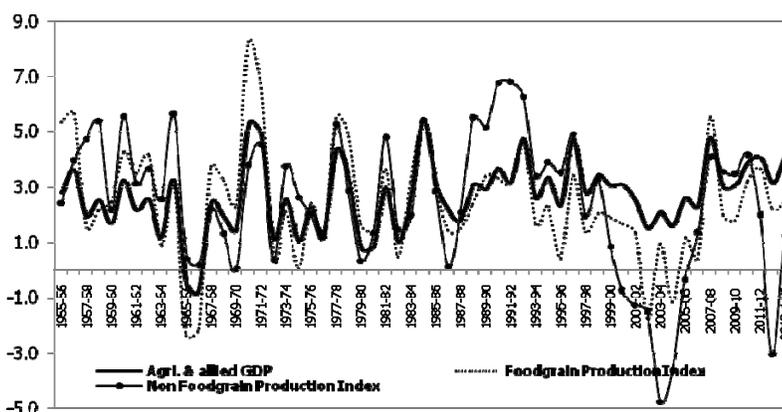
Note: # GDP at factor cost; \*Crop and livestock; \*\*output minus inputs as value addition.

Source: Based on value added series from various issues of National Account Statistics, MOSPI, Government of India and Agricultural Statistics at a Glance, Ministry of Agriculture, Government of India.

A traditionally presented growth performance is epitomised in Table 2 in terms of decadal and phase-wise growth rates. Deokar and Shetty (2014) also found a very satisfactory performance of the Indian Agriculture during the decade after 1991. The performance is not very satisfactory over phases but when it comes to reading the decadal growth, we come across a soothing picture in the foodgrain sector as compared to non-food grains. The growth rates based on value added series from the National Accounts Statistics also provide an excellent picture over decades and phases. The growth rates are perfectly fine, when it comes to reading the decadal growth, but we have a problem when one comes to the third phase (1991-92 to 2013-14), i.e., growth rates in the first two columns. If we hop a little further in the table to the rates based on National Accounts Statistics and could be dumbfounded as these figures tell a different story. But the reporting from the ground and field is quite different and farmers have strongly recorded the distress in the agricultural sector and as a result the incidence of suicides has increased. The decades that show very high growth rates also show rising distress in the countryside. Then are we caught between a method based (measuring growth) judgement vis-a-vis a field judgement? While responding to the distress cries the State takes shelter under these 'sophisticated' rates as and when these are comfortable to report. Any fluctuating series, therefore, is unlikely to depict the true growth behaviour and to be avoided. During the early eighties the Indian Society of Agricultural Economics held a seminar at Lonavala on "Growth and Fluctuations in Indian Agriculture" under the Chairmanship of Prof V.M. Dandekar. I had made a presentation along with Professor V.M. Rao, on "Measurement of Growth and Fluctuations" (Rao *et al.*, 1980) and tried to arrive at the intrinsic growth behaviour of Indian agriculture. We provided a measure of growth sieving

the extreme observation that vitiates the results. The resultant growth rate represented the core force of the intrinsic movement or growth in the series. Prof Dandekar remarked about representative growth rates “Sometimes *summary statements are made based on such disaggregated analysis which involve informed guesses or even intuition not quite derived from the given data*” (Dandekar, 1980, p.2). Further, the limitations of growth analyses in the presence of weather responding to fluctuations were discussed, and attempts made to arrive at a measure of growth excluding wide fluctuations.

One inherent mistake committed in any growth analysis is the assumption of ‘exponential growth behaviour in agriculture’. Performance of the agricultural sector by nature (weather) has built-in fluctuations with troughs and peaks alternating. In one of the earlier years the Karnataka State Government had posed a ticklish question that ‘why when monsoon and all other parameters are normal, the State Economic Survey reports negative growth?’ Government of Karnataka constituted a Committee to look into the matter and it was located that the growth rates depicted in the State *Economic Survey* were actually only the ‘per cent change over last year’. This brought forth the fallacy of using the traditional growth rates as policy tool. Following the theme at the ISAE Lonawala Seminar, I took a close look at the data and ‘Year-to-year changes. It became clear that in the agricultural sector we needed to define a new measurement of growth i.e., “Rolling Growth Rate”, computed on a moving five year series. The justification for five years is that the ‘Probability of Bad year’ arriving from a long time series is about 20 per cent and hence once in five years. Therefore, a rolling five year growth rate will provide the intrinsic movement. I computed the rolling five year rolling growth rates and the results match with the ground realities (see Figure 2).



Source: Based on the data from Agriculture at a Glance and National Accounts Statistics for various years.

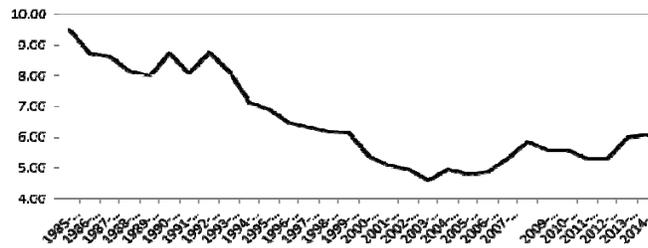
Figure 2. Five Year Rolling Growth Performance of Indian Agriculture.

The portrayal of the ground situation comes out very clearly with this representation. The period of distress and that of the good performance are seen and this corroborates the field realities. The farmers’ agitations led by Sharad Joshi, Nanjundaswamy or Mahendra Singh Tikhait of early eighties were in response to the stagnation during that phase. The agrarian crisis in the late nineties and early years of this century also show the marks during those years with continuously depressed growth rates. Thus, it will be essential to work out this rolling growth behaviour in order to learn more about the fluctuations that take place.

IV

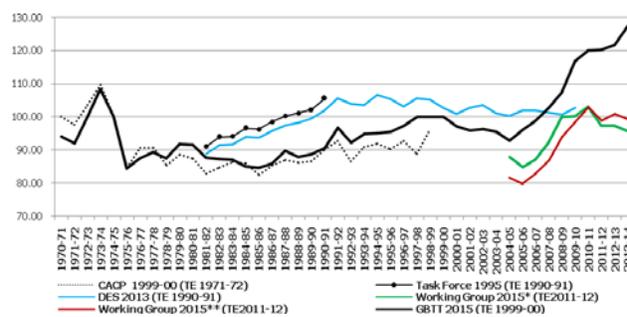
STATE BUDGETARY SUPPORT

The budgetary support by the state stands as the nearest proxy for the role of the State. We have seen earlier that the State control plays a crucial role in the factor as also the product market. That restricts the farmer from reacting to the market signals freely. It needs no emphasis that the role of the State in the allocation of the State Budgetary resources is quite crucial in maintaining the growth trajectory. The relative share of the agricultural sector has been declining over the years and even if we consider that as part of the aggregate developmental strategy the steep decline sounds caution. There is no need to work out a Cointegration to explain the growth behaviour and its causality based on budgetary allocations, even the two diagrams and reading of the troughs together make it abundantly clear that the relative neglect inflicted on the sector may be inadvertently but it remains a fact (Figure 3 and Annexure 1).



Source – Author’s depiction based on various Issues of State Finances: A Study of Budgets, Mumbai: RBI.  
 Note: Per cent of Budgetary resources allocated to agriculture. Excludes irrigation.

Figure 3. State Budgetary Expenditure on Agriculture and Allied Sectors.



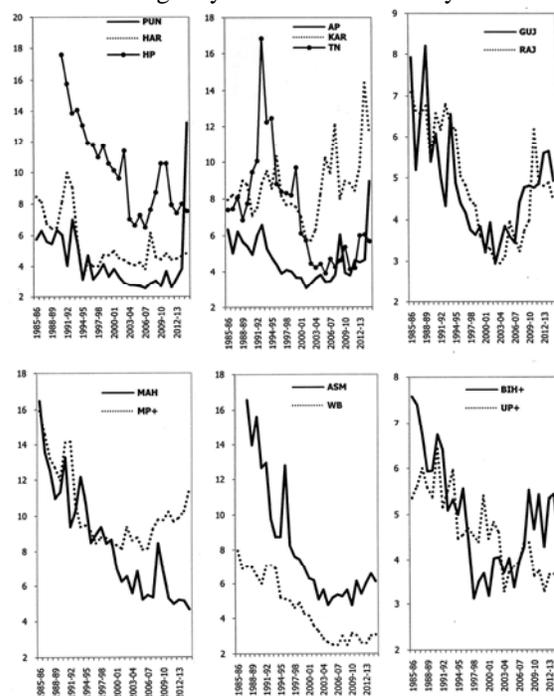
Note – 1) GBTT = author’s estimates based on CSO data; 2) \* Government Departments and appointed Task Force or Working Group; Source- Shaha, Khalil M. (2015).

Figure 4. Trends in Terms of Trade between Agriculture and Non-Agricultural Sectors.

Incidentally, this is also true across states. In most of the major states of India the budgetary allocations to agriculture have been declining significantly. At the same time the subsidies provided have also been increasing substantially over years. Subsidies now constitute about 2.02 per cent of the GDP while up to 2007-08 it was less than 1.42 per cent of

GDP (See Annexure 2). I am not taking here the question of the trends in capital formation, which clearly indicated that capital formation from public sector is shrinking over time.

The Indian Constitution has allocated agriculture to the State list and hence the allocations at the State level are important. The State level budgetary allocations to agriculture over the years are presented in Figure 5. One can observe two broad phases, one ending as of 2003-04, where the decline has reached the lowest and this is true across states, but after that a slight reprieve is obtained both at the State and at all India levels. In a cross-section comparison, Punjab and Andhra Pradesh (Undivided) are distinct with a substantial increase in the budgetary allocation. It is also seen that some of the states have effected marginal corrections in 2004-05 and onwards, but once again they have slumped down during the last three years. A few other states show a contrary picture. Connecting the distress, performance of the farm sector directly with budgetary allocation is not intended, but it serves as one of the major policy tools in correcting the development path. Can one say that there is a willful neglect of the sector in terms of budgetary allocations over the years?



Note - \* in terms of percentage the share of revenue exp on agricultural and allied sectors in the total revenue expenditure. ; + undivided states;

Source – Author's depiction based on various Issues of State Finances: A Study of Budgets, Mumbai: RBI

Figure 5. State Budgetary Supports\* to Agricultural Sector across the States in India.

When the question of a relative neglect of the agricultural sector crops up, we turn towards Terms of Trade across sectors. In a recent work on Terms of Trade for agriculture, it is concluded that “The index of ToT between agriculture and non-agriculture has been improving since 2004–05, especially after 2006–07. After reaching the highest level in 2010–11, it stagnated thereafter. The index of ToT for farmers increased significantly over the

period 2004–05 to 2013–14 from 87.82 in 2004–05 to 102.95 in 2010–11, a 17 percentage points increase.”, (Dev and Rao, 2015, p.20 also in Government of India, 2015). Matching this with the ground realities is the task of an ardent agricultural economist. But in another elaborate study with and with an improvised methodology, Shah concluded that the troughs in the period that match with the slump in the growth trends and shrinking budgetary allocations (Shaha, 2015). The ToT based argument above indicates again at a misleading picture and can we comfortably say that the income levels of farmers in the country are relatively improving as compared to the other sectors?

The actual situation also can be seen from Figure 6 on input prices and index of value addition generated in the farm sector. The input prices are growing at a great speed whereas the value added per worker in agriculture is more or less stagnant. The gap between the CPIAL and Value added represents a proxy for the increasing distress.

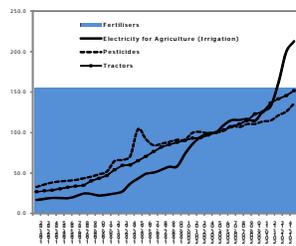


Figure A. Agricultural Input Price Index (Based on WPI 2004-05=100)

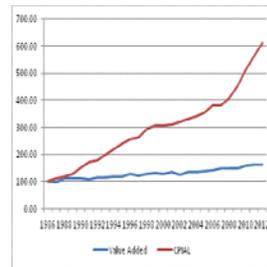


Figure B. Agricultural Value Added Per Worker and CPIAL: 1986-2012 (1986=100)

Sources: [www.indiastat.com](http://www.indiastat.com) for the raw data.

Figure 6. Growth in Input prices and Value Added per worker in Agriculture

The story that we got from the absolute growth rates are two different versions. One states that the last decade had a respectable rate of growth (Bottom row of last four columns and first two columns of Table 2) and the other tells us that the growth rates have been slumping down. The rosy idea given by the Task Force on Terms of Trade is that the ToT are turning in favour of agriculture. Possibly indicator of ‘good days’ for agriculture. But the Figure 6 (A Vs B), shows clearly that the situation is quite precarious Narayanamoorthy (2013) in a painstaking analysis of profitability in cultivation of crops based on the cost of cultivation data proved that cultivation is actually a loss making proposition. The losses are increasing substantially over time. That is also borne by the reporting that we hear from the News feed.

The experience of agrarian crisis in the early part of the 2001-11, forced the government to investigate the causation and policy leads to meet the crisis. Among the important suggestions received from the analysts important are ‘technological fatigue’ and the new Green Revolution are prominently discussed. Before we get into a new technological input it is necessary to have a retrospection on the existing achievements. The yield gaps could be taken as difference between simulated potential, or Experimental Plot Yield (controlled conditions) or Demonstration Plot Yield (Without Controlled Conditions) and the actual yield. In one of the recent studies carried out at ICRSAT, substantial Yield Gaps are noted in all the major crops (Annexure 3). The results of all the studies on the yield gaps are self-explanatory and tell us that technology could not deliver what was promised not even substantial part of that. The explanations usually are on two counts, one that the package is not scrupulously

followed or the field conditions are rasing. But the experiment is precisely planned to succeed on farmers' field and not necessary under the controlled conditions. Can we then comfortably say that the technology has been delivered to its full potential? Or we had exaggerated the claims?

V

#### THEORY OF POLICY MAKING

Agricultural policy making has been a serious business across countries. Even the countries with significant dependence on the industrial sector also have a good mechanism and dynamic policy making. Frozen generalisations in policy formulation in the agricultural sector should not be a strategy due to time and space variant nature of the sector. Stiglitz argues strongly that the State declarations on the policy interventions must stem from a theoretical perspective and interactions with stake holders and it should be dynamic (Stiglitz, 1987, p.45). Theory of policy making has to be understood from three important standpoints. First, the documentation of the constraints faced by the sector both in the short run and long run have to be carefully documented. Second, any policy document will require a clear inventory of location specific resource endowment and the historical trends in the production relations. Finally, the aspirations of the local community need to be understood for the purpose of their suitable incorporation (Aziz, 1990). Do our policy efforts pass these three-step test?, is a question that seeks answers.

Policymaking in agriculture inevitably confronts difficult contours. First, agriculture is an unorganised sector and, therefore, policy responses cannot be predicted with objective probabilities. Second, the information flow to the agricultural sector is not as quick as it takes place in other sectors. The information asymmetry and the absence of objective probabilities of outcomes virtually strangulates formulation of policy especially without a detailed homework. Third, the sector in most of the agro-climatic regions has a strong weather dependence and thus a quick fire-fighting job is usually called the policy. Fourth significant factor is the income and asset distribution in the sector that has always been a point in question. This is further complicated by the income and price variations, a hall mark of the sector. Last, that the sector has a strong link with consumers and other industries makes it clear that even a slightest issue can take shape of a strong political movement (Onion for example). The growth of the aggregate economy of any country is sensitive to fluctuations in the sector.

State proliferation of agricultural sector through policies across the world has come under a severe attack on the count of breeding inefficiency, lack of free market forces and encouraging uneconomic functioning of the sector (Finagold, 1981). Through a maze of soft policy options the farmers' dependence on the State has increased in most of the countries. Overproduction in some areas and inefficiency in production in others, have resulted in a high cost to the State exchequer and consequent dependence of the farmers on the State. During the nineties, opening of international trade and opening of the barriers brought pressure on many countries to bring about a paradigm shift in their outlook for agriculture and India could not be an exception. These changes came through the international institutions like GATT, WTO and NAFTA. A significant shift towards the liberal market paradigm emerged replacing earlier pacifying policies.

In understanding the theory of policymaking in the first instance come the objectives of the intended policy change. Hall (1993) puts forth three orders of policy changes. First, the

change that implies tampering with the current setting of the policy instruments (e.g., Change to meet the WTO requirement). Second, modifying or replacing the earlier policy instruments with or without any in-house evaluation. For example: NAP or Swaminathan Commission or the policy changes that occurred in Canada (Growing Forward) during 2013, opening up the Federal-Provincial sharing of expenditure on the ongoing schemes or Chinese New Agro Policy direction (X. Ye, 2009). Third, a complete departure in the policy goals following a theoretical or ideological framework involving the state and political actors. (Like the shift towards opening of international trade from earlier strictly guarded trade policy). Hall's model can be called as Effective and Corrective Policy (ECP) Model. Another set of models is called Cumulative Policy Accumulation (CPA) Models wherein, the accumulated welfare oriented policy instruments of the State represent policy currents (Jonasson *et al.*, 2012 and McDonald *et al.*, 1997).

Another relevant policy model tracked from the literature is called Rational Instrumentation (RIM) Model proposed by Harold Lasswell (Lasswell, 1956). This model initially considers recognising a Policy Problem with its nature and intensity. Sifts through the alternatives available with the help of the stakeholders and on ordinal scale of preferences, puts them all according to the relative welfare gain and ease of operation. A simulation exercise is taken to understand a priori the impact and consequences of the policies. These are finally reduced to the graded investment targets by a matrix that classifies areas and issues. A similar attempt was undertaken by McDonald with a SAM model in 1997. Come to a decision combining qualitative and quantitative investigation. Australian policy model is a bit new variant of these neatly elaborated in Gray *et al.* recently (Gray *et al.*, 2014). A quick review of these theories suggests that any model of policy will have to be dynamic in its content, as there are rapid flows of different dominating responses from polity and society.

In a generalised policy model, the governing structure is dictated by the feedback mechanism as well as the goals set by the provincial and Central policy institutions. Central parliament and related institutions along with the provincial and the institutions should provide broad directions to the policy (Coleman *et al.*, 1997). Provincial and the central political ideologies contribute to this process through the legislature debates. The role of advisory bodies and the interest groups (Farmers' Organisations) is also quite crucial in this endeavour. Jordan *et al.* (1994) and Gray *et al.*, (2014) argue this extensively. Jordan *et al.* state, "*Extensive consultation is an integral part of the management of pressure. Civil servants have stated that it takes less time and effort to agree to have discussions with a group than to refuse them consultation time. This process may be purely cosmetic, but it allows civil servants to present an image of wide participation and over-consultation, rather than under-consultation*" (Jordan *et al.* 1994, p.14). In the Indian context, we have a very weak evidence about the functioning of any of these models, rather there is no established drill in policy planning.

## VI

### AN INTERNATIONAL OVERVIEW

There is enough evidence of systematic policy making internationally and these policies are continuously subjected to revision. Even small developing nations too have policy wings in the ministries governing agriculture and the developed nations also take it as a serious business. We have taken here a review of a few policy making exercises in the international

perspective. This is to demonstrate the method followed and kind of issues that feature in policy making.

### *6.1 Common Agricultural Policy of European Union*

The most widely discussed agricultural policy framework is that of the European Union. The Common Agricultural Policy (CAP) document serves as a guideline for all the member countries and is revised quite periodically. In addition to CAP the French Government also has its process of policy formulation that offers a further understanding of the practice. The general orientations of the CAP were set incorporating: (a) Market unity; (b) Community preference; and (c) Financial solidarity. The member nations were to initiate State interventions in various sectors that included production, price interventions and the farm structures, while France and other farming professional organisations benefitted and wanted to maintain the State intervention in agriculture leaving some of policies at the European Community level. Initially, the CAP functioned with the objectives as set out under the Article 39 of the Treaty. These included: (i) increase production by promoting technical progress; (ii) ensure a fair standard of living for the agricultural community; (iii) stabilise markets; (iv) assured availability of supplies; and (v) ensure that supplies reach consumers at reasonable prices (Epstein, 1997). CAP endeavoured to increase agricultural productivity by promoting technical progress and by ensuring the rational development of agricultural production and optimum utilisation of the factors of production, in particular, labour (Mahe and Roe, 1996). It has given guidelines to ensure a fair standard of living for the agricultural community, in particular by increasing the individual earnings of persons engaged in agriculture. CAP also provides guidelines to stabilise the markets; assure availability of supply; enhance agricultural trade; maintain a balance between structural and market policies; and to encourage rural industries (Hill, 1984) and (European Commission, 2013). Recently, CAP modified its approach and deliberated on an enhanced competitiveness, Sustainability and effectiveness in the implementation of policies and long term viability (European Commission, 2013).

### *6.2 Canadian Growing Together and then Growing Forward*

Canadian agriculture has a better-organised framework in developing the policy. Even being a federal state, Canada has developed a process of dialogue with the provinces as well as interest groups. In the changed circumstances of WTO negotiations, Canadian agriculture and agri-food sector faces new challenges and opportunities. Federal, provincial and territorial Ministers of Agriculture have geared up to develop jointly a renewed Policy Framework with five elements: (i) Business risk management; (ii) Food safety and food quality; (iii) Science and innovation; (iv) Environment; (v) Renewal (Barichello, 1996). It is set out as an integrated and comprehensive policy framework to enhance the profitability in farming. It helps to identify common goals and mechanisms for implementation and provide a framework for the implementation of agreements that will set out precise measures.

It has been pointed out by analysts of Canadian agricultural policy that the transfer costs and efficiency losses were substantial and that the Provincial regulations tended to protect the within province systems with heavy costs. Following this view in 2003, Agriculture and Agri-Food Canada (AAFC) implemented its new Agricultural Policy Framework. While releasing

the document on future Canadian policy under the title 'Growing Together', the Minister of agriculture said in his speech "Federal and Provincial government need to develop a more integrated approach to financial and management issues. In addition, the close relationship between the farm costs, income and management points to a need to look at whether farm credit and management assistance, as well as safety nets, could be better designed to meet the objective of better risk management" (*Growing Together*, 1986, Supplement: 10, issued by Agriculture Canada).

The recent Agricultural Policy document of Canada titled as Growing Forward 2008-13, aims at achieving sustainable agricultural growth and fostering rural opportunities. The document delineating the policy was released on 24th July 2015 (Agriculture Canada, 2015). The documents also assure long term financial security to farming through various programmes namely: National Tripartite Stabilisation, Net Income Stabilisation, Gross Revenue and Price Insurance, Growing Forward documents also incorporates five components that deal with investment, stability, recovery, insurance and risk initiatives. The document elaborates the implementation. Further competitiveness, innovations, environment and institutions for risk managements feature prominently.

### 6.3 Australian Policy

Australian agriculture policy is also a dynamic document that takes note of all the changing situations. It follows close on the heels of the OECD documents on Agricultural policy, the recent among which is the OECD document (OECD, 2007). Agriculture Advancing Australia is an integrated package programme launched in 1997 that brings together many new initiatives. The government of Australia appointed a reference Group to recommend policies and programmes in 2006 and the recommendations were accepted as the policy document. The suggestions included the producers to be more competitive, sustainable and market responsive. The programmes included funding agri-business, management of natural resources, financial management and assistance to farm families in distress. The emphasis was on natural resource governance and enabling the government towards effective implementation (Gray *et al.*, 2014).

### 6.4 United States: Control and Protection

The Farm Policy in US is a continued process and decisions are taken to cumulate the policy. The development of farm policy in the US is marked by a series of policy steps that coincide with the problems confronted by the country. The farm policy of US is strongly toned by public support consistently almost over the last 200 years. In the 1920s, a single approach characterised by programmes of farm income support dominated the farm policy. The policy approaches could be analysed over four phases, all of which overlap through decades of debate and transition (detailed analysis can be seen in Deshpande and Prachitha, 2006).

In a nutshell, the American farm policy is a combination of price supports and supply management supports greater planting flexibility, and more attention to developing export opportunities for farm products. The policy is always Farmer Centric. The State assistance to farmers achieved a shift with changes in the Federal Agriculture Improvement and Reform Act of 1996. US farm policy underwent a dramatic change since 1996. The changes have been

well documented by Paarlberg and Orden (1996) and it became more a protective and aggressive trade focused. The farmers also got organised and formed state and country agricultural societies to promote the need for specialised training and scientific research. The support for these initiatives came from the South and East, which had been suffering from competition with newly opened lands in the West. The state support for education and research programmes was initiated through four major steps: (i) Establishment of the U.S. Department of Agriculture; (ii) Authorisation of a national system of agricultural colleges; (iii) Appropriation of Federal funds to support agricultural science research at state agricultural experiment stations; and iv. Organisation of an adult education system, USDA's Cooperative Extension Services (Mucha *et al.*, Undated).

The decreasing income support payments no longer remain tied to production decisions, pressed by the rising costs of farm income support programs and by the requirements of global agreements that farm income support programs keep production decisions tied to market signals (Ray *et al.*, 2003). The low prices in 1998 again started a debate whether traditional policies of direct income support tied to price fluctuations are the most effective solution to farm income variability. The twentieth century transformation of the US agriculture policy has been noted by many analysts (Ray *et al.*, 2003). The changes in US Farm policy continues with the 1996 Fair Act to enhance trade, eliminating the non-recourse loans as a support mechanism. The policy is more farmer-oriented with built-in Safety Nets in the form of Government Payments, Price Support and Stock Management for the welfare of farmers. (Damitri *et al.*, 2005). The US farm policy has changed for better with an emphasis on trade along with a full protective mechanism for the farmers.

### 6.5 Lessons for India

Agricultural policies world over have emerged with a few interesting features and these could be lessons in the process of policy formulation in the agricultural sector. First, most of the nations that have a recognisable agricultural policy have an established institutional back up in their department of agricultural administration. The Policy wings of these departments continuously monitor and issue policy statements in response to the emerging problems. This is done at EU with a secretariat on Agricultural Policy and the documentation is one of the strong points. Agriculture Canada as well as USDA have special cells to respond to the needed changes and the data base to react in time. Second, the consultation process of the EU, French Government, USDA and Agriculture Canada are strongly linked to all the stakeholders and interest groups. Farmers and farm lobbies are continuously consulted and heard. Close to us the Chinese agricultural policy takes five fold strategy that includes (i) correcting the Terms of Trade between rural and urban areas; (ii) Providing capital through credit policy; (iii) Labour transfers; (iv) Infrastructure creation and (v) Strong Social safety net Programmes (X. Ye (2009; p. 117-43). The process of policy making is a formalised with strong institutional back-up and that provides inputs to the policy. This is also true in the cases where the consultation has to be undertaken with the federal partners as well as member nations (in EU). The drill of consultation is periodically set and the Governments issue documents after successful consultations (Growing Together 1990, or Growing Forward 2015). Third, the net income of the farmer is the decision variable and the policy largely operates on this rather than technology, productivity or trade as individual components. The schemes are focused on maximising the net income flow and therefore, prices and markets are the two crucial

determinants. These feature in the process, however, as supportive evidence. Fourth, the changes after WTO in the USDA, Agricultural Canada and EU's secretariat are quite significant. These provide a backup support to the policy formulations and responses of these governments to the WTO requirements. In this context Paarlberg writes, "Can international agreements help promote domestic policy reforms?" In many instances, the modest reforms that were written into the final agreement reflected policy changes already undertaken unilaterally in response to internal budget pressures or in response to other pressures that did not derive specifically during the WTO negotiations" (Paarlberg, 1997, p.441). It is necessary to note that this came out of the analysis of the agri-policies of US, Australia and EU, which is true even in 2015. Finally, the State expenditure on farm support programmes, protective policies for the farmers and especially risk management policies are quite high on the agenda of international policy formulations and priorities and that alone is an indicator of building a pro-farmer outlook world over.

## VII

### INDIA'S EXPERIENCE IN POLICY MAKING

Efforts of the State to direct the agricultural sector policy began on similar lines as those practised by the colonial government. The method and philosophy of making agricultural policy was highly Colonial in its nature and content. The internal theme running in the policy documents that "*natives need to be educated on the advances and policies need to be made by the British experts*", a line of thinking of the British government of India then. Unfortunately we have not departed from the core philosophy. Our experience of policy formulation could be understood from three sources namely the five-year plans, various (hurriedly) prepared policy documents and various schemes initiated by the development departments concerned in response to the problems confronted. There is a general lack of awareness about the theory of policy making and, therefore, to a significant extent the policy is understood often as a set of problem solving steps taken in the context of severity of the issue and/or a common denominator of various programmes. Actually, "*A policy aims at specific, often quantifiable, objectives, deploys an array of instruments to achieve them and operates according to a pre-planned time frame for implementation. It lends itself to standardised monitoring and evaluation procedures to assess the outcome and to identify those responsible for the success/failure of the policy*" (Rao, 1998, p.1).

Known documented efforts towards 'Agricultural Policy' could be traced back to the Foodgrains Policy Committee of 1943 (Gregory, 1943), leaving the historical documents. This was in response to the food situation created by the Second World War and stoppage of rice supplies from Burma. Food availability was the only focus with no long-term solution thought of. The second attempt in this direction was the Foodgrains Policy Committee (1947) under the Chairmanship of Dr. Thakurdas, appointed to look into the food distribution aspects immediately after independence. Interestingly, the recommendations included a gradual withdrawal of control and removal of restrictions on the movement of foodgrains. In a quick succession three more committees under Maitra (1950), Mehta (1957) and Venkatappaiah (1966) addressed the food problem (availability and distribution) of India and recommend means to address these. The attempts were largely in response to the crisis and aimed at providing quick solutions and hence, could not be included in the category of policy

documents, but at best, could be called food policy initiatives (Deshpande and Prachitha, 2006).

There was no significant and holistic agricultural policy resolution in India till the late eighties even though we had the policy steps declared in the plan documents regularly (see Annexure 4). Specifically for the purpose of making an agricultural policy a Committee appointed under the Chairmanship of Late Shri Bhanu Pratap Singh, made recommendations covering all major sectors of the agricultural economy. This was called the High Power Committee Report (Government of India, 1990b) and it addressed some of the important long term policy issues. Most of us are not aware of this. The report suggested, "*Indian agriculture need not remain backward and the rural masses feature prominently amongst the poorest in the world. Both can be uplifted by improving the human resources base, increasing the farmers' efficiency through greater user of science and technology, suited to their conditions and placing them on a par with others in prices, incomes, facilities and opportunities*" (High Power Committee, Government of India, 1990b, p.74). Nothing substantial was achieved on the front of implementation of the recommendations. In the meanwhile, policy was not attended very earnestly but understood more as the major interventions in the agricultural sector (Vyas, 1994 and Nadkarni, 1993). After this we got the policy document prepared by the Government of Karnataka in 1995 and another study conducted by trade lobby ASSOCHAM in 1998. The latter document coming from the business lobby naturally focused on the business-first approach and sketched a perspective up to 2020.

Most of the agricultural policy documents came about during the nineties, not so much due to lack of policy, but mostly as a reaction to the problems faced by the sector during the decade. The first draft agricultural policy resolution came into being under the Prime Minister late Shri V.P. Singh, and Shri Sharad Joshi (Government of India, 1990a) was largely responsible for putting the draft together who was also Chairman of the Standing Advisory Committee on Agriculture (1990-91). The government under the Prime Minister Shri Deve Gowda, prepared another document on agriculture policy in the late nineties (Government of India, 1999). However, due to the political instability of the government, the document could never make it to the floor of the House. There was no serious attempt made after that till the first authentic, though hurriedly prepared (called as Hold-all), policy document for agricultural sector was put in place called New Agricultural Policy (NAP) 2000.

The NAP sought to realise by 2020: (a) vast untapped growth potential of Indian agriculture; (b) strengthen rural infrastructure to support faster agricultural development; (c) promote value addition; (d) accelerate the growth of agro-business; (e) create employment in rural areas; (f) secure a fair standard of living for the farmers and agricultural workers and their families; (g) discourage migration to urban areas and face the challenges arising out of economic liberalisation and globalisation. The policy goals stated in the document to achieve were: (a) a growth rate of 4 per cent per annum; (b) efficient use of natural resources and bio-diversity; (c) growth with equity; (d) protection from economic liberalisation and globalisation by demand driven growth and catering to domestic markets and maximise agricultural exports; (e) environmentally, technologically and economically sustainable growth. (Deshpande and Prachitha, 2006, and Government of India, 2000).

The NAP driven by the market-centric philosophy of development brought under discussion corporatisation of agriculture, not elaborated on in the document. It also emphasised market orientation of all the services, including agricultural extension (Government of India, 2000, p.19). Unfortunately, the whole policy was penned from the

viewpoint of the Central Government with least respect to the fact that Indian Constitution enshrines agriculture in the State list for policy purpose. Even though 'decentralisation' and 'participation' are the buzzwords of this decade the policy document failed to note the need for state-specific approaches. There was no clarity on the role of the state in agriculture; particularly demarcation of the role of Central Government and the State governments. Consultation process, if any, was confined to meetings with the State level agricultural secretaries and ministers in 1995 and 1997. The NAP clearly states, "*The effective implementation of policy initiatives will call for comprehensive reforms in the management of agriculture by the Central Government and the State Governments. The Central Government will supplement/complement the State Governments' efforts through regionally differentiated Work Plans, comprising crop/area/target group specific interventions formulated in interactive (emphasis added) mode and implemented in a spirit of partnership with the State*" (Government of India, 2000, p.15). On one side, the policy argued for decentralisation and on the other, it provided little room to the State government. The policy was not clear on the kind of incentive structure needed to increase productivity; mere dismantling of minimum support price structure would certainly not help. The replacement has to be competent enough to deal with the price issue.

Unfortunately, the document was a collation of ideas and ideals of different hues without any well meditated theme (Ramesh Chand, nd). This time, it was an enviable opportunity to gain from the collective wisdom of professionals, formal and informal organisations working on agriculture and related aspects and putting together a coherent document. The NAP had a large incompatibility of its instruments to achieve the goals. These mechanisms should have been spelt out, based on the objectives of the NAP. The NAP did not follow some simple steps in evolving a national level policy frame. In fact, there have been inconsistent policies in the economy - wide macro policies like foreign trade policies, industrial policies on the one hand and agricultural micro policies applicable at the smaller geographical and administrative levels on the other. These have a large and offsetting impact on agriculture (Srinivasan, 1998). Somewhere down in the wee years after independence, it was inherently accepted that the Central Government should have an authority to coordinate agricultural production in the country besides playing an increasingly active role in the development of both industry and agriculture. As a result the conflicting ideas between the provincial governments and the Union governments continued to infest the policy making exercise, and NAP was not any exception.

In the year 2004, following a spate of suicides in a few states in the country, farmers' displeasure with policy making was quite visible, there were strong protests across the country and a few states appointed Committees and Commissions to seek a solution to the problem. As a routine response the Government of India appointed a National Commission on Farmers (NCF) on November 18, 2004, with Dr M.S. Swaminathan as its Chairperson and two members (Government of India, 2006). NCF had changed the method of working of the Commissions and preferred to have wide ranging consultations across the country. By that time, some of the State Governments had already appointed Committees with subsequent reports submitted on the issues of agrarian distress (Andhra Pradesh, Maharashtra, Punjab, and Karnataka). Interestingly, NCF did not find these reports as of great importance. The NCF submitted five reports and with the fifth and final report carrying its recommendations. Rather than prioritising 'farmer' (except in the title of the report), the document dealt with all the routine issues such as revisiting land reforms, distribution and use of irrigation resources,

investment boost, credit delivery, food security, price and insurance support, market reforms and new technology boost. None of these was out of the box and had been visited in one or the other context by some Committee or Commissions earlier. Above all, nothing of that was brought to the implementation table. The farmer indebtedness was reviewed almost at the same time (Government of India, 2007), but this report goes covers a larger breadth and provides quite a few practical steps to correct the credit market imperfections.

Overall, the available policy documents and Five Year Plan Policy interventions as elaborated in Annexure 4, had been prepared by the experts without understanding the stakeholders' viewpoints. Besides, prepared under an impression that the quick and sure solutions dished out by the Union Government were perfect for implementation by the State (provincial) governments. It was after a great deal of deliberations that the architects of our constitution had allocated agriculture to the State List, thereby providing full freedom to the State governments to make the policy frame well suited to the local conditions. But the overbearing Union Government did not provide any room or forum to discuss the mutual problems, and the provincial issues remained unattended. The typical understanding is that experts who largely work with files and books can make a policy and the implementers will put that on the ground. Actual need was to deliberate intensely on the State level problems, constraints and solutions as suggested by the State level Farmers' groups, NGOs and experts. This was accomplished in a study that engaged into deliberations with the participating States with the help of local experts, Farmers' groups, State bureaucracy and NGOs, to understand the constraints and finally provided a policy matrix applicable to each of the participating state (Deshpande and Prachitha, 2006). This exercise also went unnoticed by the implementers (see Annexure 5). Unfortunately, we can firmly say that first we do not have a proper drill of making a policy and that all the policies failed at the altar of implementation. Rao aptly summarises this: "*The difficulty here is that, "Policy maker" refers not to a few identifiable individuals and government bodies but a confusing collage of elites, pressure groups and lobbies each operating with its own agenda not necessarily conforming to the national goals and priorities. The result is chronic inability of the policy makers to read the signs of crisis sufficiently in advance and to deal with them in a systematic manner; the crises he faces are challenging but certainly not beyond our capabilities to handle*" (Rao, 1998: p.7).

## VIII

### CONCLUSIONS

India inherited the administrative system from the colonial rulers with only some tinkering. The system of federal responsibility began formally with Government of India Act 1919 under the concept of *Dyarchy* with 'Reserved and Transferred list'. The system was changed to a new relationship between provinces and the Centre under the Government of India Act 1935 and that spirit stayed even beyond independence. The personality carved by the British State was that of a judicious-benevolent State (*Ma-Bap Sarkar*), one that works only for the benefit of the *natives*. The tenor of the reports, writings of the committees and other interventions by the British State Power had that over-bearing Statehood characterised by least respect to the local knowledge and/or understanding of the local conditions. This tone and tenor seeped further in our philosophy of administration even after the Independence. The Colonial *Ma-Bap-Sarkar* personality has not been thrown away but rather strengthened over years. The dependence of *Ryots* on the State has increased substantially over the years and the local level institutionalisation (PRIs ushered in 1993) did not succeed despite many efforts.

Our analyses of the experience in policy making in India indicates that the policy documents were prepared without really appreciating the problems and these were never taken seriously for implementation. We get a doubt now, if the State is really serious to understand, appreciate the problems confronted by the farmers. Many of the State Governments have no documentation of their constraints confronting agricultural sector, nor have they prepared any long term policy or even a medium term plan. The schemes are prepared in a 'Fire Fighting' mode at the State level or at the Central level. There is a strong support available on the technology front (with about 300 ICAR Institutions, about 70 SAUs, Krishi Vigyan Kendras, State Departments of Agriculture and Institutions in the State aegis) but that also could not make great difference. The proverbial Yield Gap continues to haunt us and even after decades of experience we are worried about the *Lab-to Land* issue albeit with an increased zest. We are entangled with the usual growth and maze of growth determinants with labyrinth of equations and new statistical methods. The serious academic exercises with dis-proportionate attention to the waning welfare of the farmer have proliferated the literature.

As the policies are framed without really understanding the critical failures the impact of such policies has been quite insignificant. Recently on RKVY project the Computer General of India's audit had a caustic remark. It states "*The report highlights numerous instances of the expected benefits of the RKVY not reaching the farmers. Audit noticed shortfalls in achievement of the targeted outputs in 62 projects costing Rs. 1404.94 crore in 19 States. The response of the farmers in certain projects was poor due to high costs involved. The farmers could not get benefit of the new agro technology training. Absence of interface between farmers and technical officials led to non-propagation of latest technology in an adequate manner. Poor implementation of the projects led to putting extra burden on the farmers*" (CAG, Report, 2015). We can bring out many such examples, and that indicates that we are not able to reach the targeted growth and welfare simply due to our poverty in thinking long term.

Making a centralised policy for agriculture in a federal State requires participation of all the Stake-holders. It is indeed a challenging task. We must recognise here that the Federal character of the Indian State is central to the issue. Any attempt to make a policy document and push it down the throat of the provinces is unlikely to succeed. Here a bottom-up approach is essential in order to understand the location specific problems within the States, the constraints confronting the sector, and the solutions suggested. In one of the studies I attempted to bring together policy matrix across states in India. This work was participated by agricultural economists from 14 states. The methodology involved seven steps. First, we collected all the documentation about the constraints and opportunities in the concerned state by the research leader of the State. Second, the research teams had meetings with farm leaders, administrators, agri-scientists and the administrators. Third, all the constraints and strong points were listed and analysed for getting at the futuristic scenario. Fourth, the policy leads were picked up from the stake-holders and elaborated in each of the studies. Finally, we constructed a policy matrix with the states on one axis and the policy leads spread over (i) Infrastructure; (ii) Marketing; (iii) Horticulture, Animal Husbandry and (iv). Environment. We included the production sector in the infrastructure for the sake of convenience. The states were grouped into six groups as given in Table 3.

We can say these are policy homogenous groups. The first group includes Punjab, Haryana and Himachal Pradesh. These states have historically received advantage of technological advances and market forces. They have the capacity to move towards high

TABLE 3. GROUPS OF THE STATES ACCORDING TO POLICY LEADS

Groups (1)	Names of States (2)
Towards high commercialisation	Punjab, Haryana and Himachal Pradesh
Diversifying for trade	Andhra Pradesh, Karnataka and Tamil Nadu
Infrastructure for take-off in trade	Maharashtra and Madhya Pradesh
Encashing on rainfed crops	Gujarat and Rajasthan
Need for diversification	Assam and West Bengal
Evading low productivity trap	Bihar and Uttar Pradesh

*Source:* Deshpande and Prachiitha (2006).

commercialisation, and could participate in the process of aggressive growth. These states have an excellent natural resource base and also enterprising farmers. Punjab and Haryana, the vanguards of the green revolution, could take advantage of some simple but far reaching policy interventions. Second group comprises three south Indian states of Andhra Pradesh (undivided), Karnataka and Tamil Nadu. These states have taken the initial steps to participate in the process of economic reforms and have aggressively put forth an institutional framework to enhance trade and encourage trade oriented production. With investment in infrastructure and trade plus market related institutions can make a large difference to their performance. The third group of States have inadequate infrastructure development and, therefore, have remained behind in the process of growth. Even though Maharashtra has seen some exceptional industrial development it is not-connected to agriculture and is confined to only a few spots. If this particular constraint is overcome, probably these States could garner the advantage of the process of development. Among the western Indian states, Gujarat and Rajasthan are known for their vast drought prone areas and deserts. But the water from Sardar Sarovar has brought about a significant change in some areas. Largely, these are water scarce regions of the country with rainfed cereals, pulses and oilseeds dominating the cropping pattern. These two states are also well known for the traditional business skills and, therefore, trading in grains and products could provide a winning solution. The states can institutionalise international trade. Eastern Indian states could not garner the advantage of the green revolution during its first phase and now the Planning Commission has taken up the programme of Second Green Revolution in these states. This will take some time to show the impact on this region. The cropping pattern is paddy mono-cropping and that is a clear sign of underutilisation of resources. There is a need for diversification of the cropping pattern that takes advantage of the resource position in the states. The constraints faced by the agricultural sector in these two states are totally different, as here the resource crunch is not faced except investible capital. Bihar and Uttar Pradesh were the two largest states of the country before reorganisation and separation of Uttaranchal and Jharkhand. Predominantly these states were dictating the economic performance of the country due to their sheer population and resource weight. Most parts of these two states are currently facing the problem of stagnated productivity and thus low net income for the farmers.

While concluding, I must state that we have promised a lot to the farmers as our primary stake-holder but we failed to deliver in full measure. The State has failed as it assumed only a patronising role and the farmer is treated as a political coin to be used in order to hold on to the power. As agricultural economists, our focus has also remained more on making the simple welfare centric discipline complicated with a maze of equations and formulae. Albeit these are essential to delve deeper into the new knowledge, but then that should not be the sole pursuit. It is essential that we correct our path and come to provide a strategy that will augment welfare of our stake-holders. Dantwala wrote with fullest possible sincerity in 1991

and I quote- “*The failure of agricultural strategy - and its economic policy content – to make any impact on rural poverty and unemployment or equitably distribute the gains from technological change has been variously attributed to socio-political factors such as lack of political will, the elitist composition of political leadership and bureaucracy - no less than that of its critics – structural inequalities in the ownership of land and other assets, a bias in favour of big farmers, etc. There is a strong element of truth in each of these criticisms.*” (Dantwala, 1991, p.291). But he did not give up hope with that and in the subsequent writing provided enough material to build on that but we did not use the opportunities. Lest the failures scorn us and make little of our intellectual achievements, we have to rethink on our ways and means in enhancing knowledge. It is high time now that we change round about the issues that confront in defining our role as teachers of a subject as also researchers within a new paradigm. This challenges the intellect inside us to focus on the welfare of the farmers, sustaining the development initiatives in the rural areas and at the same time prepare the coming generation to think freely. In the same spirit, let us rededicate ourselves to this onerous task.

I thank one and all who are with me in this endeavour.

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ANNEXURE TABLE 1. PERCENTAGE SHARE OF AGRICULTURAL AND ALLIED SECTORS IN TOTAL REVENUE EXPENDITURE ACROSS THE MAJOR STATES (FROM RBI)

(1)	Punjab	Haryana	Himachal Pradesh	Andhra Pradesh	Karnataka	Tamil Nadu	Gujarat	Rajasthan	Maharashtra	Madhya Pradesh+	Assam	Bengal	West Bihar+	Uttar Pradesh+	All
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1985-86	5.76	8.47	-	6.35	7.96	7.40	7.92	7.10	16.47	15.93	-	7.96	7.58	5.36	9.52
1986-87	6.31	8.12	-	5.03	8.22	7.46	5.20	6.65	13.56	14.54	-	6.91	7.40	5.62	8.72
1987-88	5.61	6.76	-	6.22	7.96	8.09	6.67	6.56	12.53	13.21	16.55	7.04	6.75	6.00	8.63
1988-89	5.46	6.45	-	5.67	8.99	6.87	8.20	6.77	10.99	12.68	13.97	6.97	5.94	5.57	8.17
1989-90	6.36	6.52	-	5.40	8.76	7.75	5.39	5.43	11.31	11.99	15.61	6.47	5.95	5.38	8.02
1990-91	6.04	8.18	17.59	4.95	7.11	9.45	6.08	6.58	13.28	14.11	12.67	6.02	6.74	6.43	8.73
1991-92	4.05	9.97	15.77	6.02	7.53	10.07	5.01	6.18	9.40	14.16	12.96	7.06	6.41	5.17	8.10
1992-93	7.02	9.01	13.87	6.59	8.87	16.83	4.33	6.80	10.27	10.67	9.78	7.09	5.09	5.51	8.77
1993-94	5.46	5.66	14.08	5.26	9.49	12.24	6.56	6.31	12.16	9.40	8.74	6.91	5.33	5.96	8.16
1994-95	3.15	3.18	13.07	4.78	8.58	12.47	4.89	6.17	10.74	9.48	8.74	5.20	5.00	4.47	7.13
1995-96	4.69	4.31	11.91	4.37	10.31	8.82	4.39	5.04	8.49	9.15	12.80	5.11	5.55	4.56	6.93
1996-97	3.16	4.01	11.79	3.90	8.15	8.40	4.17	4.82	8.96	8.48	8.23	5.01	4.45	4.70	6.48
1997-98	3.56	4.01	10.98	4.10	7.67	8.32	3.77	4.48	9.38	8.80	7.62	4.61	3.13	4.54	6.32
1998-99	4.14	4.73	11.71	4.01	7.72	8.20	3.64	4.34	8.46	8.77	7.46	4.90	3.50	4.40	6.16
1999-00	3.33	4.72	10.57	3.67	7.55	9.70	3.84	3.60	8.66	8.46	6.97	4.26	3.69	5.40	6.14
2000-01	3.83	4.99	10.13	3.65	7.01	6.13	3.22	3.40	7.02	8.37	6.33	4.14	3.18	4.47	5.37
2001-02	3.31	4.54	9.63	3.08	5.85	5.75	3.94	3.29	6.25	8.17	6.21	3.56	4.03	4.83	5.09
2002-03	2.90	4.40	11.38	3.34	5.72	4.45	2.94	2.98	6.55	9.37	5.09	3.25	4.06	4.61	4.94
2003-04	2.76	4.18	7.05	3.63	6.34	4.24	3.40	2.95	5.59	8.63	5.66	2.85	3.70	3.28	4.60
2004-05	2.74	4.06	6.66	3.82	6.28	4.43	3.85	3.13	6.84	8.79	4.77	2.66	4.03	3.72	4.94
2005-06	2.68	4.25	7.27	3.44	10.22	3.91	3.60	3.96	5.23	8.12	5.20	2.52	3.38	3.85	4.79
2006-07	2.55	3.82	6.52	3.47	9.39	4.70	3.45	3.54	5.48	8.18	5.36	2.50	3.96	3.95	4.86
2007-08	2.87	6.13	7.62	3.84	12.09	4.26	4.41	3.25	5.36	9.28	5.28	2.98	4.29	4.38	5.31
2008-09	3.05	4.58	8.72	6.06	8.01	4.62	4.77	3.75	8.46	9.80	5.64	2.50	5.53	4.38	5.84
2009-10	2.69	4.44	10.56	3.93	8.96	5.37	4.81	4.00	6.81	9.78	4.76	3.14	4.68	3.63	5.56
2010-11	3.67	4.81	10.56	3.80	8.84	4.15	4.77	6.18	5.29	10.23	6.16	3.02	5.42	3.74	5.56
2011-12	2.61	4.44	7.93	4.63	8.45	4.21	4.87	4.85	4.97	9.69	5.42	2.64	4.29	3.29	5.30
2012-13	3.21	4.48	7.40	4.52	9.72	6.00	5.59	4.81	5.20	9.90	6.05	2.62	5.35	3.66	5.30
2013-14 RE	3.83	4.66	7.99	4.66	14.42	6.06	5.64	4.88	5.15	10.28	6.58	3.02	5.44	3.67	6.00
2014-15 BE	13.22	4.86	7.53	8.95	11.55	5.69	4.93	4.45	4.67	11.44	6.14	3.07	4.37	3.48	6.07

ANNEXURE TABLE 2. DETAILS OF SUBSIDIES GIVEN BY UNION GOVERNMENT OF INDIA

*(in Rs. crore)*

Year (1)	Fertiliser subsidy				Total (6)	Grants to NAFED for MIS/PPS and import and export of sugar /edible oils (7)	All other subsidies* (8)	Total- subsidies (9)	Subsidy per cent GDP (10)
	Food Subsidy (2)	Indigenous (Urea) (3)	Imported (Urea) (4)	Sale of decontrolled fertiliser with concession to farmers (5)					
1980-81	650	170	335	0	505	-	-	-	-
1990-91	2450	3730	659	0	4389	0	6839	12158	2.10
1991-92	2500	3500	1300	0	5185	0	8035	12253	1.90
1992-93	2800	4800	996	340	6136	0	8936	10824	1.60
1993-94	5537	3800	762	517	5079	0	10616	11605	1.50
1994-95	5100	4075	1166	528	5769	0	10869	11854	1.30
1995-96	5377	4300	1935	500	6735	100	12212	12666	1.10
1996-97	6066	4743	1350	1672	7765	0	13644	15499	1.20
1997-98	7500	6600	722	2596	9918	20	17838	18540	1.30
1998-99	9100	7473	124	3790	11387	105	20801	23593	1.40
1999-00	9434	8670	74	4500	13244	50	22728	24487	1.30
2000-01	12060	9480	1	4319	13800	40	25900	26838	1.40
2001-02	17499	8044	47	4504	12595	361	30455	31210	1.40
2002-03	24176	7790	0	3225	11015	300	35491	43533	1.72
2003-04	25181	8521	0	3326	11847	156	37184	44323	1.56
2004-05	25798	10243	494	5142	15879	120	41797	45957	1.42
2005-06	23077	10653	1211	6596	18460	260	41797	47522	1.29
2006-07	24014	12650	3274	10298	26222	560	50796	57125	1.33
2007-08	31328	12950	6606	12934	32490	860	64678	70926	1.42
2008-09	43751	17969	10079	48555	76603	375	120729	129708	2.30
2009-10	58443	17580	4603	39081	61264	850	120558	141351	2.19
2010-11	63844	15081	6454	40766	62301	250	126244	173420	2.22
2011-12	72822	20208	13716	36089	70013	200	142837	217941	2.43
2012-13	85000	20000	15132	30480	65612	0	150613	257079	2.53
2013-14	92000	26500	12044	29427	67971	0	159971	255516	2.25
2014-15	115000	36000	12300	24670	72970	0	187970	260658	2.02

Sources- Various Issues of Union Budgets, Government of India (Exp Budget Vol. I).

Note \*include subsidies on petroleum, interest, export promotion and market development, Debt Relief to farmers, Railways, Mill-made cloth, Handloom Cloths and others etc.

ANNEXURE TABLE 3. EXTENT OF YIELD GAP OBSERVED FOR FOUR MAJOR CROPS\* IN INDIA

(1)	State (2)	Simulated potential (3)	Experimental potential (4)	On-farm potential (5)	Average (6)
Rice	Bihar	3170	1510	820	1830
	Karnataka	2280	1440		1860
	Madhya Pradesh	2590	1540	1600	1910
	Maharashtra	2480		0	1240
	Orissa	2410	1320	2160	1960
	Uttar Pradesh	2850	2230	1400	2160
	West Bengal	1970	740	1190	1300
	India	2560	1480	970	1670
Cotton	Andhra Pradesh	970	780	600	780
	Gujarat	1220	610	760	860
	Karnataka	790	440	520	580
	Madhya Pradesh	1030	710	0	580
	Maharashtra	1140	540	830	840
Mustard	India	1120	640	550	770
	Bihar	950	0	0	320
	Haryana	470	450	380	430
	Madhya Pradesh	300	480	260	350
	Rajasthan	1000	0	290	430
	Uttar Pradesh	950	120	370	480
	West Bengal	1630	50	240	640
	India	860	150	380	460
Wheat	Gujarat	0	0	0	0
	Karnataka	800	420	510	580
	Madhya Pradesh	80	80	150	100
	Maharashtra	0	0	0	0
	West Bengal	320	230	110	220
	India	10	0	200	70

Source: Aggarwal PK, Hebbar KB, Venugopalan MV, Rani S, Bala A, Biswal A and Wani SP. (2008), Quantification of Yield Gaps in Rain-fed Rice, Wheat, Cotton and Mustard in India. Global Theme on Agroecosystems Report no. 43. Patancheru 502 324, Andhra Pradesh, India: International Crops Research Institute for the Semi-Arid Tropics. 36 pages.

Note : 1) \* Yield gap is the difference between yield potential and average farm yields expressed in kg/ ha. The study used average farmer yields to compute yield gaps, which included irrigated areas, whereas yield potential was for rain-fed crops. Because all of these crops are commonly irrigated, the true yield gap is therefore likely much larger

ANNEXURE TABLE 4. CHANGING POLICY THRUSTS ACROSS PLAN PERIODS

Plan Period (1)	Major Issues and Policy Thrust (2)
First Plan 1951-56	<ul style="list-style-type: none"> <li>➤ Severe food availability constraints.</li> <li>➤ Maximisation of Agricultural Production. Low Productivity concerns.</li> <li>➤ Distribution of Food available to masses and Food distribution network.</li> <li>➤ Nationwide Community Development (CD) Programme Institutions for village</li> <li>➤ National Extension and Community Projects Skewed Land Distribution,</li> <li>➤ Inefficiency in Production and thus land reforms - Abolition of intermediaries.</li> <li>➤ Bringing the fallow lands under cultivation and increase in land use efficiency.</li> <li>➤ Tenants to be given the rights to cultivate land.</li> </ul>
Second Plan 1956-61	<ul style="list-style-type: none"> <li>➤ Concern about low land productivity and thrust on irrigated agriculture.</li> <li>➤ Irrigation Development for the rainfed areas.</li> <li>➤ Land Reforms Enactment of laws. Tenancy Reforms and Ceiling on Holdings.</li> <li>➤ Soil conservation as an important programme.</li> <li>➤ Co-operative Development Institutions, National Extension Service Blocks created.</li> <li>➤ Training and Extension work for the technology through Community Development network.</li> </ul>
Third Plan 1961-66	<ul style="list-style-type: none"> <li>➤ Food security concerns continued to dominate.</li> <li>➤ Technological Change and adoption of improved technology to increase land productivity.</li> <li>➤ Cultivable waste land to be brought under cultivation.</li> <li>➤ Bringing the lagging regions under mainstream growth.</li> <li>➤ Area development as an approach for development.</li> <li>➤ Intensive Area Development Programme adopted for selected districts.</li> <li>➤ Extension of non-agricultural activities in Rural areas.</li> <li>➤ An integrated land policy approach. Soil Surveys were taken up.</li> </ul>
Fourth Plan 1969-74	<ul style="list-style-type: none"> <li>➤ Emphasis on food security and minimum dietary requirements to be met.</li> <li>➤ Deep concerns about Poverty.</li> <li>➤ Regional inequality and correction of regional imbalances.</li> <li>➤ Incentives created for diversion of land towards food crops and enhancing the capacity of such land.</li> <li>➤ Emergence of Agri. Price Policy.</li> <li>➤ Concern about domination of large holding sizes and low allocative and technical efficiency.</li> <li>➤ Second phase of land reforms with land ceiling acts and consolidation of holding.</li> <li>➤ Encouragement to co-operatives. Institutional changes in Credit, Agri extension and training.</li> </ul>
Fifth Plan 1974-79	<ul style="list-style-type: none"> <li>➤ Twenty point economic programme.</li> <li>➤ Concerns to eradicate poverty efforts intensified.</li> <li>➤ Area Development strategy continued.</li> <li>➤ Drought prone areas attracted attention.</li> <li>➤ Allocation on Drought-prone area development programme, Desert area development programmes, and soil conservation was enhanced.</li> <li>➤ New impetus to dry farming.</li> <li>➤ Problems of land degradation land management in irrigated command areas surfaced.</li> <li>➤ Modernisation of irrigation in selected irrigation command areas.</li> </ul>
Sixth Plan 1980-85	<ul style="list-style-type: none"> <li>➤ Minimum Needs Programme.</li> <li>➤ Providing clean drinking water, elementary education and basic health facilities.</li> <li>➤ Larger attention to unemployment and under-employment.</li> <li>➤ Target group specific programmes for poverty alleviation. IRDP, NREP and RLEGP Programmes were undertaken for employment and income generation. Under-utilisation of land resources.</li> <li>➤ Drought-prone areas continued to attract attention.</li> <li>➤ Further attention for lagging areas on the backdrop of green revolution.</li> <li>➤ Land and water management programme under drought-prone area programme in selected districts.</li> </ul>
Seventh Plan 1985-90	<ul style="list-style-type: none"> <li>➤ Direct attack on poverty, unemployment and regional imbalances continued.</li> <li>➤ Soil erosion and land degradation surfaced as major issues.</li> <li>➤ Larger share of land was going out of cultivation.</li> <li>➤ Soil and Water Conservation was needed for averting land degradation.</li> <li>➤ Concern about drought prone areas and drought proofing.</li> <li>➤ National Watershed Development Programme,</li> <li>➤ Oilseed and Pulses Development Programmes,</li> <li>➤ Wasteland Development Programmes, and Long term view of land management was initiated.</li> </ul>

(Contd)

## ANNEXURE 4 (Concl.d.)

Plan Period (1)	Major Issues and Policy Thrust (2)
Eighth Plan 1992-97	<ul style="list-style-type: none"> <li>➤ Priority for Employment Generation, Strengthening of Infrastructure, Liberalisation and Globalisation in Agricultural Sector.</li> <li>➤ Trade Sector Priorities by Generating Surplus of agricultural commodities for exports.</li> <li>➤ Emphasis on Oilseed Sector increased.</li> <li>➤ Agro-climatic regional planning approach was incorporated.</li> <li>➤ Productivity enhancement Schemes.</li> <li>➤ Horticulture Sector to be encouraged.</li> <li>➤ Degradation of land in Irrigated command areas attracted attention. Peoples' participation surfaced as major issue in land management at village level.</li> <li>➤ Emphasis on Watershed Development approach. Soil conservation merged with watershed programmes.</li> </ul>
Ninth Plan 1997-2002	<ul style="list-style-type: none"> <li>➤ Generating productive employment through employment assurance.</li> <li>➤ Renewed assault on poverty, Accelerating growth with stability of prices,</li> <li>➤ Food and nutritional security for vulnerable sections,</li> <li>➤ Providing basic needs for environmental sustainability,</li> <li>➤ Foreign trade to be tailored for accelerating growth,</li> <li>➤ Development of infrastructure and increasing investment in infrastructure,</li> <li>➤ Export oriented growth and Emphasis on Horticultural Crops for exports.</li> <li>➤ Integrating Watershed Development Programme across various components.</li> <li>➤ Rethinking on land reforms and Land Issues.</li> <li>➤ Gap between potentials and actual crop yields need to be bridged.</li> <li>➤ Need for a long term policy document.</li> <li>➤ Decentralised land management system. <i>Panchayat raj</i> institutions to manage the village lands.</li> <li>➤ Rethinking on land legislation</li> </ul>
Tenth Plan 2002-2007	<ul style="list-style-type: none"> <li>➤ Creation of employment;</li> <li>➤ Improving pace of growth in agriculture;</li> <li>➤ Sustaining demand for labour; Employment Generation programmer to concentrate in Diversification of Agriculture and Agro Processing;</li> <li>➤ Land use policy;</li> <li>➤ Process oriented programmes focussing on poor;</li> <li>➤ Universalisation of Joint Forest Management or macro management approach;</li> <li>➤ precision farming;</li> <li>➤ Organic farming;</li> <li>➤ wastelands to be brought under economic use;</li> <li>➤ Strengthening R and D for slow growth crops.</li> </ul>
Eleventh Plan 2007-2012	<ul style="list-style-type: none"> <li>➤ Inclusive growth</li> <li>➤ Agricultural target at 4.1 per cent per annum</li> <li>➤ Emphasis on Public-Private partnership.</li> <li>➤ District specific Agricultural Plans</li> <li>➤ Addressing Climatic Variability</li> <li>➤ Research and Development for increasing productivity</li> <li>➤ Prominence to rainfed agriculture</li> <li>➤ Emphasis on biotechnology.</li> </ul>
Twelfth Plan 2012-17 (Dropped)	<ul style="list-style-type: none"> <li>➤ Strongly Inclusive Growth @ 8 per cent</li> <li>➤ Policy restructuring, clearing the 'Logjam'.</li> <li>➤ Connecting Policies and Public Programmes. Implementation Focus</li> <li>➤ Connecting different stake holders.</li> <li>➤ Scenario Analysis, Agri to grow at 4 per cent</li> <li>➤ Adaptation to Climatic Variability</li> </ul>

Source: Author's earlier work. Compiled from various plan documents. These are however not exhaustive statements but only indicative of the thrust areas.

ANNEXURE TABLE 5. CONSOLIDATED POLICY MATRIX FOR INDIA

States (1)	Infrastructure (2)	Marketing and Trade (3)	Horticulture (4)	Animal husbandry (5)	Environment (6)
Group I a) Punjab b) Haryana c) Himachal Pradesh	<ol style="list-style-type: none"> <li>1. Rational policy for reallocation of available power to different uses;</li> <li>2. Larger investments in post harvest infrastructure;</li> <li>3. Improving quality of road and rail infrastructure;</li> <li>4. Greater private &amp; public investments in infrastructure development</li> </ol>	<ol style="list-style-type: none"> <li>1. Networking system for dissemination of information on international trade;</li> <li>2. Market reforms; Trade-oriented institutions;</li> <li>3. Slow &amp; graded withdrawal of state from MSP;</li> <li>4. Promoting farmer groups to undertake procurement &amp; distribution</li> </ol>	<ol style="list-style-type: none"> <li>1. Improve quality of plant material; increasing value addition;</li> <li>2. Improving market infrastructure;</li> <li>3. Market intelligence;</li> <li>4. Promoting Horticultural growers' associations to undertake all activities upto final trade;</li> <li>5. Protecting small growers</li> </ol>	<ol style="list-style-type: none"> <li>1. High-level technology for producing hygienic milk;</li> <li>2. Diversification through genetic enhancement;</li> <li>3. Improving breeds of goat &amp; sheep; hygienic processing of meat &amp; products;</li> <li>4. Promoting value addition in livestock products</li> </ol>	<ol style="list-style-type: none"> <li>1. Inland fisheries skill upgradation in aquaculture;</li> <li>2. Groundwater recharge and economic use</li> <li>3. Soil Health cards &amp; Monitoring</li> </ol>
Group II a) Andhra Pradesh b) Karnataka c) Tamil Nadu	<ol style="list-style-type: none"> <li>1. Road network and Warehouses, cold storages;</li> <li>2. Bio-technology information centres;</li> <li>3. Strengthening Farmer information centres</li> </ol>	<ol style="list-style-type: none"> <li>1. Exploiting the competitive advantage in the international market;</li> <li>2. Regulated markets for fruits &amp; vegetables;</li> <li>3. Institutional support for trade;</li> <li>4. Reforms in Regulated Market Act</li> </ol>	<ol style="list-style-type: none"> <li>1. Improving the resource use efficiency;</li> <li>2. Promoting entrepreneurship, strengthening infrastructural facilities;</li> <li>3. Promoting agro-based industries;</li> <li>4. Introducing new crops;</li> <li>5. Promoting farmer groups for contract farming; Establish forward linkages</li> </ol>	<ol style="list-style-type: none"> <li>1. Processing for meat and meat products;</li> <li>2. Animal products processing;</li> <li>3. Ensuring fodder availability;</li> <li>4. Establishing fodder banks to meet fodder shortages</li> </ol>	<ol style="list-style-type: none"> <li>1. Promote aquaculture in the coastal wastelands;</li> <li>2. Land degradation and groundwater exploitation;</li> <li>3. Forest dwellers protection and livelihood;</li> <li>4. Watershed Management</li> <li>5. arrest soil degradation</li> </ol>
Group III a) Maharashtra b) Madhya Pradesh	<ol style="list-style-type: none"> <li>1. Road connection to villages; Transportation;</li> <li>2. Agricultural information centres;</li> <li>3. Processing units;</li> <li>4. Warehousing at market places</li> </ol>	<ol style="list-style-type: none"> <li>1. Dissemination of the prevailing output prices in different markets;</li> <li>2. Encouraging private sector for upgrading infrastructure;</li> <li>3. Commodity specialisation for trade</li> <li>4. Cold storages</li> </ol>	<ol style="list-style-type: none"> <li>1. Diversification of crops in non-traditional areas;</li> <li>2. Introducing new high yielding varieties;</li> <li>3. Processing of horticultural products;</li> <li>4. Floriculture technology information centres</li> </ol>	<ol style="list-style-type: none"> <li>1. Dairy activity in Vidarbha &amp; North M.P.</li> <li>2. Rearing of small ruminants;</li> <li>3. Animal product processing centres</li> </ol>	<ol style="list-style-type: none"> <li>1. Maintaining Forest wealth and trade in forest produce;</li> <li>2. Groundwater management</li> <li>3. Drought Proofing</li> <li>4. Watershed Management</li> </ol>
Group IV a) Gujarat b) Rajasthan	<ol style="list-style-type: none"> <li>1. Trade information centres;</li> <li>2. Post harvest technology;</li> <li>3. Promoting groups of cultivators to undertake joint activities.</li> </ol>	<ol style="list-style-type: none"> <li>1. Market support for exports;</li> <li>2. Better airports to carry goods for trade;</li> <li>3. Processing plants for important products;</li> <li>4. Establishment of forward linkages</li> </ol>	<ol style="list-style-type: none"> <li>1. Evolution of new suitable varieties;</li> <li>2. Region-specific &amp; people-specific programmes through NGOs and private sector;</li> <li>3. Processing facilities &amp; finance as well as marketing arrangements</li> </ol>	<ol style="list-style-type: none"> <li>1. Involving research centres and NGOs</li> <li>2. Developing synergies in food production &amp; A. Husbandry;</li> <li>3. Scientific methods in disease control; Better &amp; efficient animal breeds</li> </ol>	<ol style="list-style-type: none"> <li>1. Harnessing of fisheries resources</li> <li>2. Managing Water resources</li> <li>3. Control Desertification</li> <li>4. Arrest forest degradation</li> </ol>
Group V a) Assam b) West Bengal	<ol style="list-style-type: none"> <li>1. Connecting roads to markets;</li> <li>2. Warehouse &amp; Market availability;</li> <li>3. Communication facilities;</li> <li>4. Information dissemination</li> </ol>	<ol style="list-style-type: none"> <li>1. Marketing infrastructure;</li> <li>2. Support prices;</li> <li>3. Information about trade and market;</li> <li>4. Market reforms</li> </ol>	<ol style="list-style-type: none"> <li>1. Introducing new crops and new varieties;</li> <li>2. Processing units</li> <li>3. Integration with other markets</li> </ol>	<ol style="list-style-type: none"> <li>1. Promoting dairy and milk processing;</li> <li>2. Small ruminants; Poultry</li> <li>3. Processing facilities with markings</li> </ol>	<ol style="list-style-type: none"> <li>1. Maintaining wet lands</li> <li>2. Forest resources and products</li> <li>3. Tribal Development</li> <li>4. Halting degradation</li> </ol>
Group VI a) Bihar b) Uttar Pradesh	<ol style="list-style-type: none"> <li>1. Transportation; Connecting roads and improving quality of village roads;</li> <li>2. Rail transport; Warehousing facilities;</li> <li>3. Electricity &amp; fuel availability for diesel pumps</li> <li>4. Agro Processing</li> </ol>	<ol style="list-style-type: none"> <li>1. Reduce imperfections in market;</li> <li>2. Increase density of markets;</li> <li>3. Enhancing trade in horticultural crops</li> </ol>	<ol style="list-style-type: none"> <li>1. Training to adopt hi-tech post harvesting practices;</li> <li>2. Subsidies to attract private investors for establish of post harvest infrastructure;</li> <li>3. Need for agro-based industries &amp; regional planning;</li> <li>4. Establishing milk collecting centres in remote areas with proper storing &amp; processing facility.</li> </ol>	<ol style="list-style-type: none"> <li>1. Improving genetic potential of indigenous livestock;</li> <li>2. Technical support for establishment of sheep breeding farms;</li> <li>3. Improvement of fodder production and grassland development;</li> <li>4. Establishing milk collecting centres in remote areas with proper storing &amp; processing facility.</li> </ol>	<ol style="list-style-type: none"> <li>1. Flood preparedness</li> <li>2. Drought management</li> <li>3. Arresting Soil Degradation.</li> <li>4. Managing surface water resources</li> </ol>

Source: Modified from Deshpande and Prachitha (2006)