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PRESIDENTIAL ADDRESS

Planning the Agricultural Vision*

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I

INTRODUCTION

The NDA Government are committed to give very high priority to the agricultural sector. They were also committed to abolishing planning and one of their earlier acts was to abolish the Planning Commission. We begin by outlining these features in terms of the macros of the policy regime for agriculture. However in practice the Government has been very proactive in promoting planning documents, particularly agricultural planning. We attempt to describe and explain this conundrum. Also examine this Janus face in terms of policy effects. Janus it may be recalled was *the Two Faced* Roman God, we remember by naming the first month of the Gregorian Calendar as January (Janus! January). The month of January merges from the last year (the old regime), but looks to the 'future' in terms of the next year. We then outline the essential features of the Agricultural Vision of the Government as prepared by the Niti Aayog and approved by the Central Government and in an Inter-State meeting. This is then examined in terms of the economic policies followed by the Finance Ministry in terms of budgeted outlays, borrowing policies and Centre – State financial relations including funding of special agricultural programmes. We also examine the trade policies followed by the Commerce Ministry, and the science and technology policies relating to agriculture followed by the Indian Council of Agricultural Research and Science Ministries and look at administrative reform in this context. Finally we suggest modifications if any needed as suggested by the analysis.

We will begin by noting that there is a very long tradition of the President's of the Indian Society of Agricultural Economics examining planning and related agricultural policies in terms of stated objectives in their Presidential Addresses (Indian Society of Agricultural Economics, subsequently, ISAE, 2016a,b,c,d), as manifesting in the period they were operating in. One may not have the capacity but at least tries to follow the footsteps of the Greats, who in this case included Sir Malcolm Lyall Darling, Sir Manilal Nanavati, Sir S.V. Ramamurthy, C.N. Vakil, J.J.

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Anjaria, D.G. Karve, B.K. Madan and a very comprehensive treatment by V.T. Krishnamachari, followed by V.K.R.V. Rao and Tarlok Singh. V.M. Dandekar was to give the first comprehensive critique of what he characteristically called the 'hocus pocus of agricultural planning' (ISAE, 2016c, p.39). These issues then went out of fashion and were revived more recently by D.N. Jha, N.A. Majumdar and finally Abhijit Sen. (Details are covered in a paper an invited review of the Three Volumes containing the addresses of Past Presidents, see Alagh, 2016).

Why are We all Planners?

The NDA Government was elected on a promise of abolishing Planning. Strangely the then Planning Commission decided to hold a meeting to which 'experts' were invited. I was also on the list. When I said that that I did not consider it a very useful way of spending my time to come for a meeting with necromaniacal intentions, I was told somewhat severely by the senior lady civil servant at the other end that the PMO's had decided who should attend the meeting. Being somewhat traditional, I accepted, because in our day if the PMO asked you to do something you fell flat on your face and did it. Sometime before that meeting I had delivered the Invited Raj Krishna Memorial Lecture (Alagh, 2014) at my almameter, the University Department of Economics at Jaipur, where both Raj Krishna and me had taught and past students and teachers included both of us, C. Rangarajan, Raja Chelliah, G.S. Bhalla and Arvind Panagriya amongst others.

To be fair to the Government on August 24, 2014, it called some twenty so called experts and asked them what should they do instead of the present Planning Commission. Being one of them, a number of us argued that reform of the Planning Commission was an ongoing issue, in an economy following the Manmohan Singh 1991 liberalisation path. A more focused body concentrating on issues like energy, water and demographics which have a long term perspective should be the agenda of the new body as in China after the State Planning Committee was replaced by the National Economic and Social Development Commission. The Planning Secretary put all this in a two page document which we understand was to be discussed in the NDC. That was good because, it was Chacha Nehru's 125th birth anniversary and speculation on planning was loved by him, even during the freedom movement. And so he said: "The more we thought of the planning business, …. the fascination of this work grew on me. But at the same time a certain vagueness and indefiniteness crept in.." (Nehru, 1946, p.402). So in the Raj Krishna Lecture I gave my take on what the work of the new body should look like if it was not decided to abolish planning. But in fact it has been decided to abolish planning after a hurriedly called Chief Ministers meeting. The new body called Niti Aayog had a very amorphous agenda. To sum up if the Niti Aayog was to be taken seriously its agenda was in my opinion to be, amongst others, in demographics, energy, land and water and like in China it should also allocate resources for the long term plan, which it was not mandated to.

Niti Aayog, interestingly decided that resource allocation or not, it would do planning and in spite of planning being abolished and the Finance Minister allocating resources amongst the States in his Government's schemes which now in the Annual Budgets aim to allocate more money than by the UPA Government in centrally sponsored projects. The only difference is that in the UPA schema resources were allocated in the Annual Plan based on the Gadgil Mukherji Formula but now that allocation is ad hoc or as some States say, arbitrary. In spite of all this the Niti Aayog has already produced a Three Year Vision Plan 2018/19-2021/22. They do not have the resource allocation function but it consists like all earlier plan documents of sections with objectives, expenditure targets, resource allocation, sectoral plans and special problems (Government of India, 2017). They have also said that they will release a longer Seven Year Plan on which they are working (PIB, 2016).

The Niti Aayog have a difference on this. And so they state: "The Vision, Strategy and Action Agenda represents a departure from the Five Year Plan process…" (Government of India, 2017, p.1). The Aayog annex a Directive from the PMO for stating this. But the output is now in the public domain for comment and the similarities with earlier plan documents are much too striking to ignore.

We summarise the Vision Document Plan for the agricultural and related sectors and then discuss each recommendation. The hope is that there will be developments such that planning of a strategic nature will again become a serious possibility and then our work as reflected in this address and the discussion I hope which will follow, will become of some practical relevance apart from its academic interest. The academic interest will remain because as I have argued we are still all Planners! whatever that means.

Niti Aayog's Vision for Agricultural Sector

Frankly speaking the agricultural sector chapter in the Niti Aayog's vision document is not its best chapter. It is somewhat sketchy. As a background capital development expenditure which was falling since 2013 had declined to 0.9 per cent of gross domestic product (GDP) in 2015-16, but Niti Aayog expected it to rise, as budgeted to rise to 1.2 per cent in 2016-17. It presented a medium term expenditure framework in which this would rise further to 1.7 per cent in 2019/20.

Niti Aayog wanted to raise the allocation of Rs. 103,000 crores for agriculture and rural development in 2015-16 to Rs. 2,16000 crores in 2019-20. This it anticipated would raise the share of agriculture and rural development in capital development expenditure from 5.9 per cent of development expenditure to 7.7 per cent. The numbers were as follows: (Table 1).

TABLE 1.

Sector	2014/15	2019/2020 (Rs. Crores)
(1)	(2)	(3)
Agriculture and rural development	103130	215941
Power, irrigation and flood control	13355	24111
Total capital development expenditure	90649	358462

Source: Government of India, 2017, p.19

Niti Aayog's Agriculture Vision until 20119/2020 is stated as follows: "The Prime Minister has called for doubling farmers' incomes by 2022. To achieve this goal, the Action Agenda outlines a strong programme for agricultural transformation. It includes numerous measures to raise farm productivity, bring remunerative prices to farmers, put farmers' land to productive uses when they are not able to farm it themselves and improve the implementation of relief measures. Chapters in subsequent parts of the document offer an ambitious agenda for empowering the rural population through improved road and digital connectivity, access to clean energy, financial inclusion and "Housing for All".

1.11. Enhancing agricultural productivity requires of efficiently using inputs, introducing new technologies and shifting from low to high value commodities. We need to expand the scope of irrigation to increase crop intensity, improve access to irrigation, enhance the seed replacement rate and encourage the balanced use of fertilisers. Precision farming and related new technologies, that allow highly efficient farming and conserve resources, must be spread through appropriate policy interventions. Conditions conducive to shift into high value commodities such as horticulture, dairying, poultry, piggery, small ruminant husbandry, fisheries and forestry need to be created.

Farmers should get genuine rights for direct sales to buyers of all commodities, potential buyers should get the rights to buy produce directly from farmers, entry of private agricultural markets should be free and an effective legal framework for contract farming should be established. Minimum Support Prices (MSPs) have distorted cropping patterns due to their use in certain commodities in selected regions.

There has been an excessive focus on the procurement of wheat, rice and sugarcane at the expense of other crops such as pulses, oilseed and coarse grains. These distortions have led to the depletion of water resources, soil degradation and deterioration in water quality in the North-west. At the same time, eastern states, where procurement at the MSP is minimal or non-existent, have suffered. One measure that can help reduce distortions in the MSP system is the system of "Price Deficiency Payment." While MSP may still be used for need-based procurement, under the deficiency payments system, a subsidy may be provided to farmers on other targeted produce, contingent on prices falling below an MSP-linked threshold" (Niti Aayog, 2017, p.2).

No schematic and project level details are given and irrigation is clubbed with power. But as we will see the irrigation chapter has programme and project details. The vision document lists land markets, food processing, APMCs, rural urban growth clusters and capacity building of Panchayats. There is also a mention of Technology for the water, agriculture sector and the need for governance reform. Details are not there and so we will discuss these issues from our own scholarly perspectives. Details are available for the irrigation and flood control sector, so we will start by presenting them and discuss them.

Niti Aayog and the Irrigation Sector

The background is set on well known facts. Utilisable flow is 1123 BCM of water: 690 of surface and 433 of ground water, giving an availability of 1816 cu. met (m^3). In 2001 going down to 1544 m^3. In 2011, which compared with 4733 m^3 in Australia, 3145 m^3 in Brazil, but only 1111 m^3 in China. In 2050 the high demand is 1180 BCM and the low is 973 of which 70 per cent will be in agriculture. The present storage is 303 BCM of which 53 BCM was silted by 2000. The ultimate irrigation potential is 140 mn. hec. and 112 mn. hec. has been created. There is a 21 per cent gap between potential created and utilised. Half the net area sown needs irrigation.

There are insufficient funds for improving irrigation efficiency and poor maintenance of existing facilities. Participatory irrigation management is scarce, cropping patterns are unsuitable to available water and the agro climatic regime and there is absence of last mile connectivity (Niti Aayog, 2017, pp. 166-167).

The Pradhan Mantri Krishi Sinchai Yojana is to give water to each field, but at a practical level the irrigation department has included the advanced irrigation benefit project to complete 99 projects. The AIBP was designed by me as a successor to such schemes originally designed in 1975. It had worked then and later but by 2010 it was not working. In the Twelfth Plan my exhortation for a detailed study was included. I had argued then "We really do not have a detailed analysis of the debacle in irrigation. The first issue is the failure of the advanced irrigation benefit programme. This programme for completing ongoing irrigation projects was started when I was Planning Minister. It was started because we have a long history of successes with such programmes. The first such programme was started in 1975/76, when we had formulated a plan for food self reliance. Table 2 shows that it worked and irrigated area went up by 5 million hectares and irrigation intensity from 108.77 to 110.25. We then reinvented it in 1987/88 when the late Rajiv Gandhi wanted a Plan for stepping up stagnating agricultural production. As member in the Planning Commission, I saw it again worked and over a brief period irrigated area went up by around 5 million hectares and irrigation intensity from 113.15 to 115.15. There has been very little progress since. These earlier programmes and the critical role they played have been described elsewhere, but the real issue is why did the AIBP fail? (see Table 2).We need a serious professional evaluation, but being involved with planning and monitoring such programmes for over three decades, I suspect that not including a canal component to cover the last mile of water deliveries is one reason and the other is bringing in a loan component and not keeping it a Central Plan scheme.

TABLE 2. IMPACT OF SPECIAL IRRIGATION PROGRAMMES IN THE SEVENTIES AND EIGHTIES

S.No. (1)	Year (2)	Net irrigated area (3)	Gross irrigated area (4)	Irrigation intensity (5)
1.	74/75	33.71	41.74	108.03
2.	75/76	34.59	43.36	108.77
3.	76/77	35.15	43.55	108.40
4.	77/78	36.55	46.08	109.53
5.	78/79	38.06	48.31	110.25
6.	87/88	42.89	56.04	113.15
7.	88/89	46.15	61.13	114.98
8.	89/90	46.70	61.85	115.15

Source: Government of India (2005a), Table 14.2, p.176.

There are, however more basic factors at play. As compared to relief against rainfall failure, the farmer now wants yield enhancing water supplies for water stress periods of diverse crops grown with modern technology. Access to ground water gives them this facility, badly planned and inefficiently managed canals don't, farmers and their communities now want control on water deliveries. We have just started canal systems which employ for example hydraulic controls up to distributory levels and the successful examples are few and far between. In a recent critique of the Ken Betwa project put on web by the Interlinking of Rivers Project we have described how the soil scientists have shown that the area is unsuitable for paddy and irrigation would enhance yields from oilseeds, pulses and fodder crops, but the system is designed largely for flood irrigated paddy. We have also described the alternatives now possible, like the computer controlled delivery systems being constructed in the Sardar Sarovar Command (see Alagh, 2013).

In spite of these warnings, dutifully stated in earlier plan documents we continue with the programme without analysing the reasons for the money not giving us any results now.

The Aayog's vision discusses the National Water Framework Law, which we found surprising since that was an initiative of the UPA Government. The Draft of the Law was prepared by a Committee I chaired. (Government of India, 2013). I had great misgivings and in the Foreword to that Report I said that 'I accepted the daunting task..' because, 'As India takes its place in the sun in this century as a major global entity it does so with a high rate of growth and a young restless population on the move. Very little can hold it back. But water, energy and other non renewable resources like land will set the eventual limits of high growth. In spite of all the hiccups and the fact that in some regions we are already very stressed, I believe we have the civilisational and given our federal democracy our institutional strength to use water well' (ibid., p.i). But in spite of all my misgivings this work has become important because The Minister of Water Resources has introduced a Bill on The

National Water Framework Law in the Lok Sabha in 2017. It follows in the main Draft Act my Committee had prepared with the change that a minimum amount of water as a Right is not accepted. I submit the reasoning behind the provisions of this Act, so that it may be of some use in our meeting and later the parliamentary debates on the subject.

The draft National Water Framework Law of the Government of India has an expression which is owed to an initial draft Shri Mohan Kumar, then Additional Secretary, MOWR, used: 'Appropriate Government'. The framework is meant to provide the larger structure for organising the support mechanisms to States and communities in their governing institutions at the levels that matter, the local government, CBOs (Community Based Institutions), the management of ponds, water bodies, watersheds, aquifers, and river basins

Action on solving water problems will be at the local, watershed, aquifer, state and river basin level. This is the guiding mantra of the proposed National Water Framework Act. But it is not allowed to remain just a Mantra. The Act lays the mechanisms to give strength to the local and State, watershed and river basin levels. Chapters I, II and IV deal with these aspects. It is these that need discussion, scrutiny and strengthening.

Once these mechanisms are fully in place, as appropriate structures, the national role is largely that of support. But these support mechanisms can be critical for the appropriate Government. Cutting edge frontier technology in water delivery and development projects has to be developed at home and accessed in the world and made available. Working best practices must be known and diffused. Development and applications of success stories will require data and information support. The framework attempts to set up the systems to aid the state governments, local bodies and the appropriate government in these support mechanisms.

The Act provides for a web based information system (WRIS). It will be state of art, comprehensive and user friendly. Geographic mapping systems, satellite based technologies, all aspects in which India is good but has not used for decentralised systems like water and will be developed at the national level. The Andhra Pradesh Farmer Managed Information System I had highlighted in my Evaluation of the FAO in South Asia (FAO, 2009) has now been introduced as a major instrument of water management since the Twelfth Plan. These kind of systems are inter disciplinary, farmer and user friendly and well honed to solve problems. In the 100 distressed ground water districts information through real time to each farmer on water levels can be a major instrument for evolving better systems. For example if you and me know how each of us is impacting exactly on the common aquifer, we can better evolve working systems. Similar examples abound of technology based solution systems in ground water, river basins, watersheds and other water bodies recognised in the framework.

Rivers are back in fashion. Yogi Adiyanath wants the Gomti to be integrated with the Ganga. The Gomti near the ghats at the Deoband is not a river but a nallah in the dry season as is the Sabarmati before we pump in scarce Narmada water in it at the expense of the farmers for whom it is meant and not as entertainment for Ahmedabadis.

Should we plan with agro climatic regimes or in river basins? We plan water projects in watersheds and basins but the flagship agricultural development. Rashtriya Krishi Vikas Yojana (RKVY), which in a mutilated form still lives if the Budget papers are to be believed works in an agro climatic regime of which I am granddaddy but the water and agriculture projects work in silos. Planning and policies for convergence would have high returns as many experiments show. But now planning has been abolished. In spite of this setback, the Water Resources Ministry has kept up a long term water conservation planning policy focus. In February 2016 Mukesh Sinha then JS PP in MWOR and the CWC ranking official on water planning presenting the National Water Framework Law in Jal Manthan 2 organised by the MWOR, argued that'. 'It suggests we experiment with watershed basins at the lowest level and integrate with agro climatic regimes. We can then move up to larger watersheds and the entire river basin'.

The role of the national government in the complex area of dispute resolution is important. Experienced based solutions need to be looked at. Lawyers are always a problem and setting up tribunals only delays by decades. Asked to arbitrate in a season's dispute on water sharing in a river basin (See Indlaw.com,1999), following the Apex Courts directive, I had suggested that a three layer system implemented in the Mekong Basin amongst nations which had actually gone to war with each other be designed. This system, at the highest level political, at the second level coordinative and at the third level a delivery apparatus, was implemented and has worked reasonably well. Everybody was always unhappy but the water flowed from Karnataka to Tamil Nadu but this year there was again disruption and violence. Nothing ever succeeds but nothing ever fails in this great Bharat Varsha of mine. However the bad news is that the Government has introduced in Parliament a draft Bill which provides for a National Tribunal to settle water disputes. Past experience is that once an irrigation dispute goes to a legal apparatus like a tribunal it gets delayed by decades.

Land Markets

The Niti Aayog statement on land markets has not much on the tenancy problem in India's rural economy but is largely concerned only with land availability for the non-agricultural corporate and industrial sector. A few years earlier there seemed to be emerging a fair consensus across the political spectrum that it was not very prudent to tamper with a decade old ongoing process of the reform of the land market (Ramesh, 2015). The earlier "Revenue Laws" of registration of titles were a part of a century old colonial law. The Imperial Government kept almost complete control of land title and land use with itself to dispense land as 'Inams' to a dependent class and in a large measure the freedom movement was created around changing that. In addition, there emerged the problem of benami transfer of land which became very widespread after the land reform particularly the Land Ceiling Legislation in the second half of the last century. In this case, while land was shown in the name of the tenant, effective control remained with the landlord. A new kind of problem emerged in the seventies of the last century. Small peasants started giving up their land to middle and large peasants as they found it easier and more productive to work as landless labourers rather than to live of their share on the income from their meagre land holding. This phenomenon was described as reverse tenancy and in many Northern and Western states up to a third to two fifths of the land farmed by middle farmers was leased in from small farmers. Studies show that small farmers who are efficient cannot make enough money to meet their both ends and therefore, in many cases leased out their land to the middle level farmers in *benami* transaction. The new kind of paradigms that were emerging were not well known outside the rural setup and to those who were conversant with Indian agriculture. We still had the "DO BIGHA ZAMIN" syndrome. In fact, a large number of the Do Bigha Zamin Kisans moved out of agriculture. The main surprise of the Census 2011 was the increase in landless labourers in the rural sector and in agricultural occupations. Whether this was because of the pull factor for better earnings outside agriculture or the push factor on account of immiserisation of large numbers of the peasantry, was debated and the jury is still out. Maybe both are at work in different parts of the country. This is still possible since there is a fractured labour market. Of course we have to be clear that where the push factor operates, misery is great, particularly in years of adverse weather.

The average peasant who cultivate land say above one hectare is a very different person than the caricature our urbanites debate. He is generally educated and is quite aware of the trends around him. This farmer is invariably young. He is into growing high value grain crops or commercial crops. The case of high value durum wheat and parmal paddy is much too well known to repeat description. Monsanto may be unpopular with the activists but high yielder and/or genetic seeds are not so with farmers. Take maize. A lot of it has now grown for feed in Gujarat where I work. This is so in the Adivasi belt of the eastern part of the State. It is also there in North Bihar. Genetically modified seeds were adopted when their yield was around 2 tonnes per hectare. By now averages of 5 tonnes per hectare are reported. These farmers were earlier using seeds which would yield them around 2 quintals per hectare. So this is the new world. It is an enticing world of commercialisation and high income. But along with this comes the market risks of unbridled globalisation and commercialisation. These are the three horses of the acopylypse: uncertainty, high cost, failure to internalise technology. The farmer needs money. These seeds are expensive. The earlier seeds were either purchased from another farmer or from the local agricultural university. Now he has to pay thousands of rupees for the seeds. He also needs more inputs. Water has to come at a particular time and if rain fails, he has to pump out water. Energy may not be available and the water level may in any case have gone down. He has to pay extensively for pesticides. Genetically modified variety of seeds attract insects. For all this, the farmer needs more money. The co-operative sector has been talked down. Banks and what is euphemistically called the kerb market both need collateral and charge high rates of interest. When things are alright, it does not matter, he pays back. In Gujarat, the farmers actually contract a part of the standing crop to the financier. But when the crop has failed, he is left high and dry.

He has borrowed money and has to repay. His cultural values demand that. The average rate of suicide in the farm population in the country is not high. But in some districts it is so, say in Western Maharashtra. Studies show that in some districts the rate is much higher and has also gone up in recent decades. A danger is that the problem may become epidemic in nature. Remember that in rare documented cases girls in school have been prone to inexplicable hysteria on a mass scale. Societies have also been prone to hysteria. It is extremely important that this does not happen.

The land legislation brought in the early part of the decade retained the powers of the State in the eminent domain but only at the margin. By and large, the legislation made an effort to create a land market and was an adjunct to the larger process of reform in the economy. The powers of the State were curtailed. If they acquired land for public purpose like construction of roads, hospitals and other social and infrastructural facilities, they would have to purchase up to seventy per cent from the open market. The State could however, use its powers of 'eminent domain' to acquire the rest. This was sensible, since it precluded that one or two people could stop the acquisition of land for social purpose and delay the construction of a highway or a hospital and so on. In particular public purpose like defence and security projects had priority. This has been done in Chandigarh, but that is an exception.

This process was also legislated for the land requirements of manufacturing enterprises. Some experts were critical of this and I was one of them. It is true that land costs are rising and procurement of land for an industrial project is a difficult problem. This however, reflects the basic scarcity of the resource endowments of the country. India is short of water, energy and prime agricultural land. In addition manufacturing enterprises want to locate around metropolis, even if the land there has high opportunity costs in terms of agricultural or rural needs. They would not like to go to barren land elsewhere. To be fair we don't do land use planning by building infrastructure for such alternative locations on a sufficient scale.

The manufacturing sector has to learn to live with the real scarcities of the economy. In a sense, it is being argued that Indian industry has the benefit of labour costs and certain kind of technological expertise, but not that of scarce land near the metropolis. A long lasting reform would require that the policy makers are able to look into the real problems rather than revert back to the colonial mind-set that the state knows better who to endow land to.

Reform means that different economic agents pay the market price or opportunity costs of the resources they need, rather than rely on State allocative powers. It is strange that when it has come to an opportunity for the farming community to make money from scarcity rentals the State which swears by reform goes out of the way to deny them the economic benefit of garnering such scarcities. It can be argued that non-market methods are needed to handle scarcities. But that is not there in policies for other commodities. So why discriminate against the farmer when at long last he has a chance to make money.

Land use planning may not be possible since planning has been abolished. But the authorities could ask Niti Aayog to examine the problem holistically, rather than from a narrow industrial perspective Earlier perspectives of Governments policy objectives are contained in an answer to a Parliament question where the Ministry of Agriculture has stated that minimum support will be above the MSP and tariff policy will be used to protect the farmer (Government of India, 2005b).

Food Processing, APMCs, Forward Markets and Rural Urban Clusters

The Niti Aayog document just mentions these as a bouquet of goodies. In fact each is a serious issue and a serious solution. There is a very little of policy which helps the farmer. Farmers are growing crops where the government is not there. My book on *The Future of Indian Agriculture* showed that there were four million kisans who we ignored, They were going to the market with their produce to meet the demand which came from high income growth in the economy. These markets are largely in our larger villages which the census calls census towns, because they meet the criteria of defining an urban town. You will be able to buy my book only after a month because the first print is sold out. Many State Governments still call these census towns, ‘villages’ and first stage processing, communication and transport and market infrastructure is not there. These markets only mean that Kisans go there to sell. I discovered these census towns as an important feature of our economy in fact before the results of the Census 2011. In my S.K. Dey Memorial Lecture in 2006 (Alagh, 2007). I showed that urbanisation in Gujarat was grossly under-reported because over 1800 rural habitations were in fact urban as classified by the Census but not by the State Government and if these were taken into account the rate of change in urbanisation was double that officially estimated. This would seriously impact rural urban projections because they worked with first differences of growth rates. The APMCs have no relationship with these markets. There is no crop insurance and there is no social security. The policy vacuum also shows up in the fact that the hundred Smart Cities plan does not provide for subsidies for such markets. Policies are in a rarefied domain where the policy maker does not know or takes no action. On the top of all this, if the farmers right to land is taken away, he or she feels doubly deprived.

We have reached the stage of Nirvana where pursuit of knowledge is no longer of value. It is the suited experts who build the future. The Kisan is the beneficiary of forward markets, which I have always supported as an objective. If you say that "listen I was in a maize purchasing area and the forwards do not matter to the Adivasis", you are told that the market is thin. After you say that if the market is thin, the first round of reform has to create a functioning market they look askance, as if you are relic from Neanderthal times to use an expression of Jagdish Bhagwati. Fortunately while the trader is playing safe with SEBI keeping tab, the Farmer Producer Companies we discuss subsequently have taken to forwards in a big way and 1.42 lakh farmers had trading accounts by mid September 2017.

At first sight a National Agricultural Market sounds a quixotic idea in a sector where substantial commodities are perishable, first stage processing is important and the farmer's reach is limited in terms of access to demand centres. Most of the action is within twenty kilometres of the farm and the focus has to be on improving his access to better terms where he brings his produce. I have, as we saw argued (Y. Alagh, 2013) that markets in so called census towns are important and ignored and Munish Alagh (2016) in his book argues amongst other things that the farmer has to be helped within twenty kilometres to process and dispose of his produce. But to an economist markets are also about price discovery and in that sense the national market is the instrument. Taking care of transport differentials, agricultural commodities do have a national market. This is not only in the present but also in the days to come for a farmer has also to make the decision to sell or to stock and so futures are the instrument. This year's *Economic Survey* makes the point that "As of 2011, India's openness- measured as the ratio of trade in goods and services to GDP has far overtaken China's, a country famed for using trade as an engine of growth. India's internal trade to GDP is also comparable to that of other large countries and very different from the caricature of a barter riddled economy". There is no recognition of agricultural marketing infrastructure in census towns. A plan for a thousand such habitations annually, centred around agro processing, communication, transport, storage, trade and financial collateral instruments and institutions to create and trade would be a beginning.

We may encourage farmers groups as Producer Companies. This legislation was based on a draft produced by a Committee under my Chairmanship (Government of India, 2013) They can also play a larger role in strategic partnerships with business groups. The more we encourage organisations of smaller producers to organise their interests and strategise their relations with large companies, the better and more enduring will be the systems we create. It would have been ideal to retain the Producer Company in the Company Act, 2013. That would have given the institution the priority it deserved. But it should not be an add on but a central part of the legislation. The Nitin Desai Committee set up by a civil society group has shown that the treatment of the sponsors of Producer Companies varies across States at the Registrar of Companies level. This needed to be remedied. There was also evidence that loans for working capital given as a matter of course to co-operatives for example were not given to Producer Companies. This needs to be remedied. The Boston Consultants Report on NABARD's future had a special section on Producer Companies and their financing. These kind of initiatives need implementation. Pradan has set up Producer Companies in Adivasi areas. NDDB is experimenting with Producer Companies in Saurashtra and Andhra Pradesh. More than four hundred such companies exist. They are naturals for the National Agricultural Market. However they are being included I am told in the Draft Law the Government is introducing on contract farming and that law will not be a part of the Ministry of Company Affairs. It will be with the agriculture related establishment and their culture is the bossism of the co-operative movement.

Market infrastructure is important for the performance of marketing functions and expansion of the size of the market and for transfer of appropriate price signals leading to improved marketing efficiency. The price collection mechanism does not provide timely data, without which the market is a non-starter. The State agencies at the district level and below are not capable in following up cases of chronic non-response. This aspect has been described in some detail in a *Report to the National Statistical Commission on Agricultural Data Systems reform*, which I chaired (Government of India, 2013b) unwarranted. The critics of The Company Act (Second Amendment), 2002, stated that Producer Companies were not corporate companies in the conventional sense. This is correct. But India is not a capitalist corporate or Communist. Experiments in new institutions should be encouraged.

There is then the question of Futures Markets. To an economist markets are about what the Austrians called teuttonments and equilibrium prices. A national market is one such structure. This aspect has been ignored apart from economists like A.H. Khusro, D.S. Sidhu and Madhu Pavaskar. We try to put some flesh in this idea.

Commodity trading restarted recently. There are four national commodity exchanges, Multi Commodity Exchange (MCX), National Commodity and Derivatives Exchange (NCDEX), National Multi-Commodity Exchange (NMCE) and Indian Commodity Exchange (ICEX). Indian markets have thrown open a new avenue for retail investors and traders to participate: commodity derivatives. With the setting up of multi-commodity exchanges in the country, retail investors can now trade in commodity futures without having physical stocks. Historically, pricing in commodities futures has been less volatile compared with equity and bonds, thus providing a portfolio diversification option. The size of the commodities markets in India is significant. Of the country's GDP of Rs.13,20,730 crore (Rs. 13,207.3 billion), commodities related (and dependent) industries constitute about 58 per cent. Currently, the various commodities across the country clock an annual turnover of Rs.1,40,000 crore (Rs. 1,400 billion).

Like any other market, the one for commodity futures plays a valuable role in information pooling and risk sharing. The government has essentially made commodities eligible for futures trading, but the nationwide exchanges have earmarked only a select few for starters. The argument used against futures and price discovery which is the only logical basis for commodity financing against is that markets are thin and allow cartelisation and perverse speculation. The answer to thin markets is to strengthen them and until then regulate them. It is not to ban price discovery. The market mediates between buyers and sellers of commodities, and facilitates decisions related to storage and consumption of commodities, in allowing futures. While the NMCE has most major agricultural commodities and metals under its fold, the NCDEX, has a large number of agriculture, metal and energy commodities. MCX also offers many commodities for futures trading.

Unfortunately there has been in the past practically no retail avenue for punting in commodities. Commodities actually offer potential to become a separate asset class for market-savvy investors, arbitrators and speculators. Retail investors, who claim to understand the equity markets may find commodities an unfathomable market. But commodities are easy to understand as far as fundamentals of demand and supply are concerned. Retail investors should understand the risks and advantages of trading in commodities futures before taking a leap. Historically, pricing in commodities futures has been less volatile compared with equity and bonds, thus providing a substantial portfolio diversification option.

The arguments against 'speculation' is to reform the market and regulate it but not to discourage efficient working. Fortunately SEBI has issued a circular setting up position limits on agri-commodities so that runaway agri-futures do not disturb prices in the spot markets. SEBI has established these limits on the basis of the recommendations of the Commodity Derivatives Advisory Committee.

The national agricultural E market needs many preparatory steps. In 13 States 417 APMCs have been unified and 168 more will be added soon. But if finance is denied as at present for collecting price statistics, the idea will remain a non-starter like many 'clever' schemes for the kisan. Hopefully the provisions made in the Union Budget will provide for this. The BE for this was Rs. 15085 crores in 2016/17, but the RE was lower at Rs. 13741 crores and the BE of 2017/18 of Rs.13585 crores may need to be raised later (Government of India, Ibid., p.4).

Companies which have built storages and are providing agro support infrastructure need to be supported and more such groups created. There has to be recognition that a warehouse receipt is excellent collateral and can be traded. But rural urban projections still ignore this great dynamics of the rural-urban continuum as we call it in our future of Indian agriculture. There is no recognition of agricultural infrastructure there. The problem here is the operation of our systems in silos. ministries and departments in urban development, agricultural co-operatives and marketing, roads, company affairs, banking and industry (for agro based industries) are needed to coordinate. Not easy but can be done with determination and clear directions.

This kind of planning will require an Empowered Task Force, possibly in the Niti Aayog and with a nodal Ministry say Agriculture. While some investment will be in the public sector, it will largely be a PPT arrangement. Guidelines will have to be developed since this is a State subject.

CONCLUSION

The Niti Aayog is to be congratulated for bringing upfront the whole question of infrastructure and support for the next stage of Indian agriculture. As we have seen the statements made are but a beginning and are prima facie not all do able by 2022, But stating them is important for it gives all of us a peg to latch on to. We have only tried to state the agenda in doable terms so as to set the stage for a serious discussion of the acceleration of a slow moving sector. Inshaallah the argumentative Indian will now take over. If it happens that will be a big reward for our solo attempt at the big canvas.

The problems of the small farmer and landless labourers have unfortunately been omitted in serious discussion. It won’t do to mention the UPA schemes watered down as the default option. But it is early hours and I hope this meeting will give sufficient attention to these serious issues.

At the meta level there is a more serious issue. The Agro Economic Research Centers largely established in the University system gave a big fillip to theoretical advances in the understanding of a small peasant based agriculture in a labour surplus economy. In this century privatisation of education meant tepid support to these knowledge bases. The last few years have seen the withdrawal of the State in practice and now the process is being completed by the end of planning. It is this which has to be remedied if our description as a country which somehow muddles through is not to be tarnished.

But after all the rona dhona let me say that I firmly believe we will solve our problems. Thank you and Jai Hind.

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