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Singh, K.M.

R.A.U., Pusa, India

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Regulatory Environment and Subsidies and It's Impact on Rice Sub-sector in India

K.M.Singh¹

Abstract

Agricultural growth has been largely responsible for India's desire for long term food security for its rapidly growing population and making food affordable by price stabilization. It is therefore a big challenge for the policy makers to make policies which enable farmers to efficiently adjust to a less regulated production and marketing environment. Lack of an effective competition policy regime in India, has constrained the farm sector gains from trade reforms, and farmer's capacity to adopt new technologies. Thus, well thought agricultural policy reforms are essential to enhance the agricultural sectoral productivity in India. The current paper is an attempt to understand the various regulatory provisions and subsidies which affect the production and trade of rice the most important food crop in India and the world.

Key words: Rice, Policies, Regulations, Subsidies, India

¹ University Professor and Chariman, Department of Agricultural Economics, Rajendra Agricultural University, Pusa, Bihar, India, Email: m.krishna.singh@gmail.com

Since the mid sixties India saw the beginning of the green revolution in its agricultural sector which witnessed rapid growth, facilitated by policy support, new production technologies and public investment in irrigation infrastructure in terms of several large irrigation projects.

Agricultural growth has been largely responsible for India's desire for long term food security for its rapidly growing population and making food affordable by price stabilization. It is therefore a big challenge for the policy makers to make policies which enable farmers to efficiently adjust to a less regulated production and marketing environment. However, lack of an effective competition policy regime in India, has constrained the farm sector gains from trade reforms, and farmer's capacity to adopt new technologies. Thus, well thought agricultural policy reforms are essential to enhance the agricultural sectoral productivity in India.

Agricultural Policy and Administered Prices in India

The advent of the green revolution in the mid-1960s marked a turning point in the technological "upgrading" of Indian agriculture. The agricultural research and extension system received special attention during this period since Mexican wheat and International Rice Research Institute (IRRI) rice varieties had to be adapted to Indian conditions and made acceptable to farmers through extension and training.

Initially, new technology was confined to wheat production in the north-western states of India. In the early 1970s, however, new varieties of rice were successfully introduced and the rice revolution spread not only in Punjab and Haryana but also to many other parts of India including the southern coastal areas. The focus of agricultural policy became the modernization of agriculture through extending seed-fertilizer technology to different parts of the country. Measures were also taken to involve small and marginal farmers in the production process by providing them with new inputs, including seeds, fertilizers and credit at subsidized rates.

Administered prices were the third area of policy during the planning era. In the context of pervading food shortages up until the mid-1950s, agricultural price policy had aimed at serving the main planning objective of keeping foodgrain prices low in the interest of food security. With the founding of the Agricultural Price Commission in 1965, price policy also provided incentives to farmers to increase production by establishing remunerative prices and assuring minimum support prices. The objective of the price policy was to reconcile two opposing interests - that of the farmers for fair remuneration and that of the consumers for reasonable prices.

The fourth important component of policy was the establishment of a comprehensive management system for the procurement, storage and public distribution of foodgrains to provide food to consumers at reasonable prices. During periods of scarcity, minimum support and procurement price operations were combined with compulsory procurement, levies on millers, zonal restrictions and other measures to enable the distribution of foodgrains (at subsidized rates) through the public distribution system (PDS). Sufficient food stocks were kept for running the PDS and also to help to stabilize prices through open market operations.

The fifth component was tightly controlled trade and exchange rate policies. In the case of agriculture, except for a few traditional commercial crops, the sector was insulated from world markets through the almost total control of exports and imports. The estimated surplus over domestic consumption requirements determined the quantities to be exported and vice versa for imports. Foodgrains, sugar and edible oils were imported in times of scarcity to prevent domestic prices of essential commodities from rising and to impart a measure of stability to domestic prices in the interest of both producers and consumers. Foreign trade in most agricultural goods was subject to quota or other restrictions such as minimum price requirements.

Finally, financial policy attempted to mobilize resources for public sector expenditure and for public investment. A system was created to extend cooperative and institutional credit to the rural sector, thus facilitating private investment in infrastructure and encouraging the adoption of new technology.

A review of the past performance and policies of India's foodgrain sector reveals that the main drivers of growth have been modern inputs and technology, institutions, and markets with the changing role of the public and private sectors. The present challenge facing Indian policymakers is to efficiently balance food security concerns and higher growth objectives. This will require not only pushing the production frontier to sustainably augment supply, but also ensuring strategic management of foodgrains including procurement and distribution.

The review of input policies highlights the pressure placed on foodgrain systems, in a business-as-usual scenario that extensively subsidizes input and promotes their intensive usage. Fallouts such as excessive groundwater withdrawals and distorted application of nitrogenous fertilizers have implications on the environmental sustainability of natural resources apart from being a considerable fiscal burden. The current policy of subsidizing agricultural power, irrigation, and

fertilizers has outlived its relevance and is actually constraining agricultural investments in areas where the returns are higher. Although it is difficult to completely remove these subsidies, they still need to be gradually phased out and converted into investments in rural infrastructure (especially roads) and research and extension systems, which desperately need to be (re)vitalized. It is time the government started to actively partner with the private sector (in infrastructure creation and research) and civil society organizations (in extension), as they have played an increasingly important role in recent years.

The review of the output management policies show that the current policy paradigm consisting of public procurement of grains at a pre-announced minimum support price, public storage, and public distribution has resulted in distortions across crops, especially rice and wheat, as well periodic build-up of large stockpiles and stock rundown of these grains at a high cost to the government. Moreover, public procurement and stocking, coupled with interventionist international trade policies, is often at variance with the trends in international markets, resulting in lost opportunities for Indian exporters of rice and wheat. The regional concentration of the system of public procurement in the northern states, aided by intra-country trade and movement restrictions, has also resulted in large spatial disparity in agricultural productivity and farm income as well as uneven development of output markets across states. As a result, producer and consumer welfare is often compromised, even though the government's objective is to maintain a balance between them. Major reforms on the output side would include linking of MSPs with market prices, allowing futures markets in cereals, liberalizing international trade and bring forth greater competition in domestic trade to ensure output markets are more uniformly developed across states and that the country has a truly integrated market for foodgrains.

The activities of the Food Corporation of India (FCI) and India's statutory wholesale marketing arrangements (Agricultural Produce Marketing Committees) were, on *prima facie* grounds, considered to be having major impacts on competition and price transmission to the farm level. The likely extent of those impacts was considered sufficient to warrant in-depth, quantitative, analysis of efficiency losses associated with FCI activities, such as their stockpiling and procurement arrangements (including minimum support prices to farmers in certain locations). The analysis also included an assessment of the appropriateness and compatibility of the FCI's

various public policy objectives and identified alternative, less competition restricting, policy options for meeting those objectives.

A study by NCAER found that the existing system of controls on agricultural markets have not served the purpose of enhancing competition among market intermediaries. Lack of market incentives has also impeded the development of agricultural infrastructure and regulatory restrictions and controls apply to rice processing in almost all the major states. Inefficient supply chains are also resulting in high levels of wastage in food grains and horticulture crops.

Market orientated reforms, however, necessarily involve progressively decoupling agricultural assistance from farm input and output prices and the associated quantities. Significant efforts are required by government, however, to tailor such changes to the specific circumstances of each country.

A clear message from policy developments in both developed and emerging economies is that policy reform and the 'openness' of economies hold the key to productivity gains, rather than having governments attempting to 'drive' growth through subsidised agricultural input and output prices.

A related concern is the continuing focus of some governments on establishing 'growth targets' as the centrepiece of rural policy. This experience highlights the need for governments to also be ensuring that food security and rural income goals are achieved in the most efficient manner so that national resources and limited government funds can be efficiently utilized. Pursuing output and growth targets, without regard to the economic, social and environmental costs of achieving them, has been demonstrated to be a waste of national resources and ultimately incompatible with the goal of achieving food security and increasing rural incomes in a sustainable manner. Government policies must be redirected toward increasing market efficiency and correcting market failures, such as poverty alleviation.

In the case of India, given the current status of agriculture and the rural sector, the challenge is therefore to make this transition without placing in jeopardy the food and income surety of vulnerable groups including marginal and small farmers. This calls for a well thought out strategy for gradually, but not unduly slowly, transforming Indian agriculture and establishing a policy environment that can provide rural producers with the flexibility to face the challenges of a fast growing modern economy.

Development in agricultural R&D staff

The allocation of research budget towards salaries, operating cost and capital costs influence the efficiency of agriculture Research & Development, e.g. during 2001-2003 ICAR spent 50 per cent on salaries, 35 per cent on operating costs and 15 per cent on capital investment, but in SAUs 67, 20 and 13 per cent of the expenditure goes towards salary, operational cost and capital cost in 2003, respectively. The allocation of research budget on several of research programmes is policy decision and reflects priorities for research. In last 5 years ending with 2009, even with the positive trend in public agricultural R&D in India, the staffing in agricultural R&D has shown declining trend due to stagnation in recruitment and enhancement in salaries. However, among the research institute ICAR spent about 50 per cent in crop research while SAU spent 85 per cent in crop and livestock research.

Private investment in agricultural R&D

To encourage the private sector involvement in agricultural technology development, India has strengthened its IPR regimes in harmonization with international agreements. IPR guidelines by ICAR will be geared to stimulate innovation by sharing research benefits with innovators. It is fostering the partnerships with the private sector for the scaling up and commercialization of technologies developed in the private sector. Private investment in agricultural R&D was relatively low until 2000. Growing world population, global food demand and the lack of extensive factors of production push food and agriculture producers to find a new way to increase output. According to USDA, private agriculture research and development (R&D) expenditures, increased from \$6.9 billion in 2000 to \$11 billion in 2010. R&D expenditures on crop improvement & biotechnology, crop protection and farm machinery account for about 85% of total private R&D expenditures in the world.

Subsidies in Indian Agriculture

The Indian Government provides free electricity (in some states like Punjab and Tamil Nadu) to the farmers along with subsidized water, seeds, chemical inputs and transport. It also guarantees purchase by the government of all most of the wheat and rice produced in selected states. This agricultural regime has certainly resulted in increased agricultural production; however, the extent of government intervention has impeded the development of functioning markets. The result is that inefficiencies and degradation now threaten India's long term

economic sustainability and agricultural productivity. Liberalisation measures implemented across other sectors of India's economy, have failed to extend to agriculture. Table-2, gives an idea about the amount of subsidies provided to agricultural sector by the Govt. of India over the years under different heads.

Table-2: Agricultural Subsidies in India during 1993-94 to 2000-01

Year	Agricultural Subsidies (Rs. Crore)				
	Fertilizer	Electricity	Irrigation*	Others	Total
1993-94	4562	2400	5872	1235	14069
1994-95	5769	2338	6772	1246	16125
1995-96	6735	1977	7931	1034	17677
1996-97	7578	8356	9221	895	26050
1997-98	9918	4937	10318	983	26156
1998-99	11596	3819	11827	1182	28424
1999-2000	13244	4276	11487	1937	30944
2000-2001	13800	6449	13681	854	34784
* Includes imputed subsidies of irrigation					
Source- Central Statistical Organization, New Delhi					

Agricultural input subsidies and the Green Revolution prevented famine in many parts of India. However, India continues to experience a high rate of malnutrition, owing to poverty, inefficiencies and corruption in management of cereals supply chains. Growth in grain yields has not matched with an increased demand, nor has it resulted in efficient input usage. Farmers do not have the incentive to improve input productivity and have thus become dependent on the subsidies to sustain their production and incomes.

As India's demand for food continues to grow, the subsidy bill is also expected to grow substantially. The current level of government spending on the system is unlikely to be maintained, as the net loss generated is leading to persistent deficits. If the funds are not creating a sustainable agricultural system, they are an inefficient allocation of public resources.

Greater efficiency could be attained by allowing a market-based input supply chain for agricultural inputs to operate, but the current policy mechanism inhibits the development of a functioning market and the cost to poor smallholders would be disastrous.

Effects of Subsidies on Indian Agriculture

The subsidy system has resulted in misallocation of resources, which may reduce India's ability to meet its future food demand. Current growth in food demand is predominantly for vegetable and meat products, associated with the changing consumption patterns of the growing middle class. Demand for grain products is declining. The current policy regime is not suited to this change and is incapable of adapting. Rice and wheat crops account for three quarters of agricultural land area and 85 per cent of the gross value of crop output. Although there is now a surplus of these crops, farmers have no incentive to diversify so long as the purchase of these crops is guaranteed. To ensure India's long term food security, current policies must be adapted to allow producers to respond to changing market demands.

Subsidies also result in detrimental environmental impacts due to resource overuse, as farmers have no incentive to use freely available resources efficiently. Notably, groundwater extraction is occurring at more than double the recharge rate. Furthermore, as water resources are depleted, farmers respond by installing deeper wells that use more electricity, compounding the existing electricity overuse problem. This over-extraction is a key factor driving India's severe and worsening water security situation. Other adverse environmental impacts are associated with the overuse of chemical inputs, leading to soil degradation, nutrient imbalance, and losses in ecosystem services and biodiversity. While the subsidies have resulted in increased yields, policy change is needed to create incentives for farmers to adopt more efficient practices, to prevent further degradation and promote efficient input usage.

The strategic implications of this policy regime for India are significant. For example, there is some possibility of tension with neighbours such as Pakistan, primarily associated with the differential costs of production causing tension between farmers. There is also the potential for more serious, long-term conflict over shared water resources, should current usage practices cause them to become scarce.

The difficulty is that internal instability, in the form of social unrest, could be widespread if dramatic policy changes are attempted, as farmers make up half of India's population and thus

exert considerable political pressure. Policy changes would be extremely unpopular among farmers, who rely on the subsidies as a form of income support. It is therefore necessary that any policy change is carefully designed, so as to encourage innovation in a way that farmers perceive will benefit them. Removal of the subsidies without compensation would harm household food security. To achieve subsidy reform without provoking unrest, will require changes that involve multiple policy mechanisms, including extension, education and incentives. While adaptation is likely to be a challenging and complicated process, it is crucial. Continuation of the current policies will be detrimental to India's food security, welfare and, in the long-term, economic growth.

Why subsidize Indian Agriculture?

The major question in front of the policy- makers and economists these days is that that do we really need subsidies? For this, one needs to look into the negative effects of subsidies which are far more than the positive effects. Once received, people become dependent on the subsidies. Subsidies make the beneficiaries lethargic. Hence, subsidies are sometimes termed as sweet poison. Misuse of subsidies for political purpose is known worldwide. Subsidies support one industry at the expense of the other. When a person is given subsidy benefit, it imposes burden on some other person in the country. Malpractices have often been noticed in the administration of subsidies.

The whole issue of subsidies cannot be seen in isolation of today's politics. The whole issue of subsidies is an economic as well as a political issue. The subsidy policies in India are being advocated by those same policy makers who appear in public as pro-poor, but are driven by the political implications of their actions. In India, the politicians lack the courage to privatize the huge, loss-making public sector because they are afraid to lose the organized labour vote. They resist dismantling subsidies for power, fertilizers and water because they fear the crucial farm vote. They don't even think of touching food subsidies because of the massive poor vote. The politicians create their elections agenda out of the subsidies and corner the real meaning and use of subsidies. Increases in subsidies will only result in keeping the political constituents happy and lead to a bulging fiscal deficit – without benefiting the intended beneficiaries.

One who advocates subsidies should also keep in mind one thing that the subsidies in India never reach their intended target i.e. the poor. The fact is, in India, most subsidies are not for the poor but for the rich. Despite of the continuously rising food subsidies, hunger and

malnutrition prevails in the entire country. Due to faulty government practices, people who are in the real need of subsidies- even for their sheer survival are being forced out of the system.

Even the fertilizer subsidy in India reveals the same dismal picture. Fertilizer subsidy places another heavy burden on the central government. It is a very well known fact that the subsidy benefits majorly goes to the fertilizer industry and not the farmers. Only 60 per cent of fertilizer subsidy goes to farmers. If we take a look at the fertilizer subsidy and its origin, then we will come to know that the original purpose of the fertilizer subsidy was to encourage spread of green revolution technology to new areas and farmers but this reason and motive has lost its credibility in the recent years.

Here regarding the fertilizer subsidy, one should also keep in mind that the availability of subsidised fertilizer should be restricted to farmers who grow staple food and cereals as they need it the most and those farmers, who produce cash crops, do extensive horticulture or produce farm goods for direct exports should be kept outside the purview of subsidy regime.

The most alarming aspect of the surging subsidies is not the size, but the manner and purpose of spending on them. Subsidies provided in India suffer from both inclusion error (wrong kind of people benefiting) and exclusion error (deserving people left out of subsidies). Efficient subsidies must be transparent, targeted and-in many cases-temporary. These three Ts are missing from most subsidies in India.

The issue is not about removing subsidies but about how to make them effective so that they reach the target consumers and people are benefited from it. The policy- makers should try out new- mechanisms to reach the target consumers more effectively. Sometimes government subsidises some things but those things might not be affordable by the target audience, so there is need for restructuring of subsidies.

Now the time has now come to work on building a political and national consensus on the subsidy issue. It is important that we restructure subsidies so that only the really needy and the poor benefit from them and all leakages are plugged. All subsidies should be targeted sharply at the poor and the truly needy like small and marginal farmers, farm labour and urban poor.

Reforms can only be made in the subsidy system when the policy- makers, politicians and economists will understand that the question is not whether to subsidise or not, but who to subsidise and how.

Thus some measures for effective utilization of subsidies can be:

1. The focus should be on physical achievements and not on financial disbursements.
2. The effects of subsidies should be monitorable and measurable in terms of quality or quantity.
3. Subsidies should be given as a one- time help or for a short period. Subsidies on continuing basis should be avoided.
4. The parameters fixed on subsidy should be transparent.
5. Subsidies should be cost- effective. Most of the assistance should reach the intended beneficiary and very small amount should be spent on administrative arrangements.
6. Subsidies should be properly targeted, i.e. benefit should go to the really deserving.
7. Timing of subsidies should be made proper. For example, free seed distribution should be just before sowing.

Agricultural supply chains in India are subject to numerous forms of regulatory intervention by government, such as input subsidies, APMC markets and the activities of the Food Corporation of India. These interventions are generally inefficient in meeting their stated public policy objectives and therefore unnecessarily restrict competition and significantly distort price signals through to the farm level. This is having the effect of maintaining certain farm production patterns and hence, impeding farm adjustment into the production of commodities where India has a comparative production advantage.

The response by government to declining yields and resource degradation has been ongoing increases in input and output subsidies. This has resulted in marginal yield gains now being achieved at very high levels of inputs and hence sectoral productivity is entering a declining phase with associated adverse implications for regional incomes and poverty.

While this situation can only be arrested with significant agricultural policy reform and sectoral adjustment, there are important and fundamental implications for the focus of technical farm level research. Much technical research into crop yields is arguably aimed at addressing 'symptoms' rather than 'causes', and is therefore likely to be having the effect of reducing the pressures on government to progress policy reform. It would therefore be imperative to re-consider the merit of technical research where it relates to regulated production systems characterised by subsidised input and output prices.

What needs to be done now?

Important underpinning public policy principles drawn from contemporary international experience are that (a) public policy objectives should be closely aligned with addressing significant and accepted forms of 'market failure' and (b) the form of intervention should be that which meets the objective and which imposes the least restriction on competition. The assessments are to be based on contemporary public policy principles and the extent to which traditional industry policy settings were being replaced with trade practices law. Further, studies are needed on actual agricultural policy settings in India which consider the merit of policy objectives and the means by which governments were endeavouring to achieve them.

Economic Rationale

India recurrently faces food price inflation and declining agricultural productivity. Such studies could provide a rational approach to agricultural policy reform and identifying specific reform options in relation to the Food Corporation of India, and the Indian Government can initiate suitable reforms through agencies such as the Competition Commission of India.

It also essential to have better and more efficient price signals to flow through to the farm sector, both immediately and over the next five years that will stimulate farm level adjustment and higher farm incomes. Further work is required, to closely and transparently monitor agricultural incomes and productivity, and the effects of agricultural policy reform on those sectoral performance measures.

Regulatory impediments to the inter-sectoral adjustment of capital and labour also need close, ongoing, consideration and need to be subject to the same competition disciplines as has been proposed in the project for the agricultural sector.

Farm level adjustment in response to policy reform will impose adjustment costs on farm families requiring further consideration of adjustment assistance by government. Broader public benefits in the form of enhanced public and private investment in food production and associated services will however be the result along with more affordable food prices.

International commodity trade and food security will potentially be enhanced.

Social impacts

Agricultural policy based on subsidised input and output prices inevitably leads to lower farm incomes, over exploitation of the natural resource base and increasing public sector debt. Not only does this result in poor social outcomes for the agricultural sector, but the capacity of government to fund the provision of other public services, such as health and infrastructure is reduced, thus reducing the social well-being of the community generally.

Agricultural policy reform as outlined in the previous sections necessarily has its impacts over an extended time horizon, rather than immediately. While farm and community level policy reform may in the short term impose significant adjustment costs on highly assisted industries, ultimately, more sustainable employment opportunities within agriculture and other sectors of the Indian economy will result in much improved social living standards.

Policy Options

Recognising that policy reform is the domain of the Indian Government, the following policy options are may be put forward for consideration based on the project analyses:

1. That the Indian Government, with the Competition Commission of India, moves to adopt a 'market failure' based policy framework to guide agricultural policy reform.
2. Key components of that framework include:
 - A transparent legislation/regulation review process, whereby agricultural regulation that significantly influences competition and food chain prices is subject to an independent, rolling, 5 year review process;
 - As part of a broader agricultural policy reform program, government objectives need to increasingly focus on facilitating efficient input and output markets with necessary targeted assistance and safeguards for vulnerable groups;
 - Regular monitoring and surveying of the farm sector to enable a sound understanding of developments in farm incomes and productivity in response to the government's policy reform agenda, to be shared with key stakeholders; and
 - The strategic application of competition law.

3. Analysis of alternative mechanisms for meeting the current government objectives pursued through FCI operations indicates that current problems with wasteful levels of stocks and denial of food to needy consumers can be minimised by:
 - addressing the FCI's food security objective through the introduction of targeted programs which effectively meet those food security objectives in relation to the rural and urban poor, such as a food stamp program;
 - addressing the FCI's farm income objective through alternative arrangements, such as a guaranteed price deficiency payment scheme;
 - Requiring the FCI to focus on the management of the buffer stock.
4. Given that much information already exists in relation to the adverse effects of agricultural policy involving the provision of government assistance through input and output prices, early reform priority be placed on:
 - Improving the ability of rural labour and farm families to adopt more efficient farm practices and to move into other sectors of the economy; and
 - Implementing an orderly transition program from currently provided input subsidies to new farm programs which focus on more appropriate measures of productivity and the market failure issues typically associated with agricultural production systems.

Developments in the rice sector

The Indian government implemented several policies to boost rice production. Numerous subsidies, ranging from fertilizer to irrigation, electricity, seeds, machinery, and food, are available. The government subsidizes agricultural inputs to keep farm costs low and increase production. Irrigation and electricity are supplied directly to farmers at below production costs.

The subsidy rate for pump sets, seed drills, rotavators, knapsack sprayers, power weeders, and transplanters is 50%. Power tillers are distributed at 25% subsidy to a maximum of \$989. In April 2010, a new nutrient-based subsidy scheme was implemented in which farmers are given incentives to use a better mix of nutrients. It provided a subsidy on nutrient nitrogen (N), phosphorus (P), potash (K), and sulfur (S) contents for 2010-11.

There is also an additional subsidy on fertilizers carrying other secondary nutrients and micronutrients. Around 120 million farmers rely on this fertilizer subsidy. Since 2005-06, India's

Ministry of Agriculture has been implementing the Production and Distribution of Quality Seeds Scheme with the target of ensuring timely availability of quality seeds of various crops at affordable prices.

Through the Food Corporation of India (FCI), the government implements price policy through procurement and public distribution operations. The agency buys rough rice and milled rice for which a minimum support price is announced well before the commencement of the Rabi and Kharif seasons. They buy paddy rice directly from farmers and maintain huge rice stocks at all times. These stocks are then subsidized by the government and distributed to poorer communities across the country.

On the trading side, commitments on rice import tariffs under the Uruguay Round Agreements Act (URAA) for India are bound at 0% since 2009 up until the first quarter of 2012. The government imposed a total ban on exports of nonbasmati rice in October 2008, partially lifted it in April 2011, and removed the ban in September 2011.

Electricity Subsidy to rice farmers

In India, electricity subsidies enabled agricultural users to access electricity at prices below the marginal cost of supply, thereby lowering the cost of irrigation and groundwater extraction, an essential input in agricultural production. These electricity subsidies may also generate economic inefficiencies. They may distort decisions over electricity consumption and groundwater extraction and induce individuals to grow more water intensive crops. Given the size of electricity subsidies for agriculture in India as well as in other developing countries, the economic consequences of this poverty alleviation strategy may be large.

Evidences suggest that these subsidies are not without their benefits. The expansion and uptake of tube wells for irrigation was largely expedited by subsidized electricity prices, which reduced the price of groundwater extraction. In turn, this growth in irrigation increased agricultural yields, lowered food prices, increased demand for agricultural labour and disproportionately benefited landless farmers. In India, state governments are authorized to set electricity prices, therefore electricity prices vary across states. There is also substantial heterogeneity in prices across time; this occurs because states respond to economic and political pressures by changing agricultural electricity subsidies.

Electricity subsidies have resulted in an increased groundwater extraction and agricultural revenues. It has been reported that a 25 percent increase in electricity prices generates a 1.6 percent decrease in groundwater extraction and a 5 percent reduction in agricultural revenues, where this reduction in revenues is partly driven by a reduction in crop production. Production of water intensive crops, along both the intensive and extensive margins, increases in response to a reduction in electricity prices.

Agricultural Policy Reforms – Strategic Directions for India

The comparative study of the agricultural experience in the BRICs countries provides significant evidence that a range of market orientated agricultural policy reforms can lead to higher rural incomes, increased agricultural productivity and reduced poverty. Market orientated reforms, however, necessarily involve progressively decoupling agricultural assistance from farm input and output prices and the associated quantities. Significant efforts are required by government, however, to tailor such changes to the specific circumstances of each country.

A clear message from policy developments in both developed and emerging economies is that policy reform and the 'openness' of economies hold the key to productivity gains, rather than having governments attempting to 'drive' growth through subsidised agricultural input and output prices.

A related concern is the continuing focus of some governments on establishing 'growth targets' as the centrepiece of rural policy. This experience highlights the need for governments to also be ensuring that food security and rural income goals are achieved in the most efficient manner so that national resources and limited government funds can be efficiently utilized. Pursuing output and growth targets, without regard to the economic, social and environmental costs of achieving them, has been demonstrated to be a waste of national resources and ultimately incompatible with the goal of achieving food security and increasing rural incomes in a sustainable manner. Government policies must be redirected toward increasing market efficiency and correcting market failures, such as poverty alleviation.

In the case of India, given the current status of agriculture and the rural sector, the challenge is therefore to make this transition without placing in jeopardy the food and income surety of vulnerable groups including marginal and small farmers. This calls for a well thought out strategy for gradually, but not unduly slowly, transforming Indian agriculture and establishing a

policy environment that can provide rural producers with the flexibility to face the challenges of a fast growing modern economy.

More generally, the focus of government needs to shift from effectively acting as a market operative, through efforts aimed at directly influencing farm prices, to one of facilitating the development of more efficient markets, with appropriately targeted safety nets and adjustment assistance.

The Indian experience shows that:

- Food security can be addressed more efficiently through direct income support programs directed at the poor, than through large scale government food stockpiling and distribution which goes beyond the maintenance of stocks needed for emergency food security needs. However, where such arrangements are maintained, the potential benefits of commercialisation should be evaluated;
- Farm income support delivered directly through farm input and output prices leads to unintended and inefficient resource use distortions, and by delivering most benefits to better off farmers and processors, it is not only regressive but also ineffective in targeting support to those most in need; and
- Once programs are in place that effectively target the poor and disadvantaged, governments need to consider whether their price stabilisation and risk management objectives can be more efficiently addressed at the farm and industry level through strategies such as production diversification, off-farm income and private marketing options such as forward contracts.

A truism is that market based policy reforms are inevitable in response to changing supply and demand conditions and the need for economies to maintain global competitiveness.

Nevertheless, they are often politically sensitive and need to occur in an orderly manner that engages with key stakeholders and the broader community.

Hence there is a strong case, particularly for emerging economies, to introduce public institutions and associated regulatory review processes that enable transparent and ongoing scrutiny of agricultural policy settings, with review processes complemented by:

- The regular monitoring by government of farm incomes and sectoral productivity to assess the impacts of reform; and
- An ongoing program of independent public policy research aimed at enhancing the welfare and productivity dividends of the government's regulatory portfolio.

A major concern for India is that the traditional forms of agricultural policy, such as the FCI, its food grain procurement arrangements, APMC markets, minimum support prices and input subsidies, have created an incentive system throughout India's food supply chains which maintains certain 'historical' production patterns, and in so doing, limits agricultural sector adjustment which would otherwise enhance sectoral incomes, productivity and food security.

The unintended impacts of these arrangements, such as their contribution to food price inflation and decelerating total factor productivity, are also now becoming more evident. They may also be acting as a disincentive to farmer participation in new programs and to private sector and foreign investment in areas such as infrastructure provision.

Importantly, they also incur significant budgetary costs that impede the capacity of government to otherwise assist farm families and communities through the introduction of new government adjustment programs.

In this context, the productivity of India's agricultural sector needs to be re-considered with a focus on total factor productivity, as defined by the relationship between inputs and outputs, rather than on 'partial' productivity measures, such as crop yields.

The current emphasis of government assistance on subsidising prices, needs to shift to focus on those forms of market failure typically associated with farming systems, such as information failure with respect to the development and adoption of new technology, credit markets and the introduction of industry and government partnership arrangements aimed at facilitating more efficient levels of investment in environmental management, food safety, bio-security and infrastructure provision.

Given the focus of the recently constituted Competition Commission of India on ensuring fair and healthy competition in the economy to achieve efficient resource use and faster and inclusive growth and development, it follows that it has an important role in considering the application of trade practices law to agriculture as part of India's new 'agricultural policy program'. This will help ensure that the gains from reform are efficiently and equitably

distributed among supply chain participants consistent with national goals. Important areas of focus will be (i) 'unconscionable conduct' and 'market power abuse', rather than on differences *per se* in market power between buyers and sellers, and (ii) farm level arrangements that provide for collective bargaining.

Policy Options for Indian Agricultural Sector

Recognising that policy reform is the domain of the Indian Government, the following policy options may be considered based on above discussion:

1. That the Indian Government, with the Competition Commission of India, could move to adopt a 'market failure' based policy framework to guide agricultural policy reform.
2. Key components of that framework include:
 - a transparent legislation/regulation review process, whereby agricultural regulation that significantly influences competition and food chain prices is subject to an independent, rolling, 5 year review process;
 - as part of a broader agricultural policy reform program, government objectives need to increasingly focus on facilitating efficient input and output markets with necessary targeted assistance and safeguards for vulnerable groups;
 - regular monitoring and surveying of the farm sector to enable a sound understanding of developments in farm incomes and productivity in response to the government's policy reform agenda, to be shared with key stakeholders; and
 - the strategic application of competition law.
3. Analysis of alternative mechanisms for meeting the current government objectives pursued through FCI operations indicates that current problems with wasteful levels of stocks and denial of food to needy consumers can be minimised by:
 - Addressing the FCI's food security objective through the introduction of targeted programs which effectively meet those food security objectives in relation to the rural and urban poor, such as a food stamp program;
 - Addressing the FCI's farm income objective through alternative arrangements, such as a guaranteed price deficiency payment scheme;

- Requiring the FCI to focus on the management of the buffer stock.
4. Given that much information already exists in relation to the adverse effects of agricultural policy involving the provision of government assistance through input and output prices, early reform priority be placed on:
- Improving the ability of rural labour and farm families to adopt more efficient farm practices and to move into other sectors of the economy; and
 - Implementing an orderly transition program from currently provided input subsidies to new farm programs which focus on more appropriate measures of productivity and the market failure issues typically associated with agricultural production systems.

References

1. _ 2010. Behind the Attack on 'Subsidies'. Aspect of India's Economy, No. 49 (August 2010), <http://www.rupe-india.org/49/subsidies.html>
2. Australian Centre for International Agricultural Research. 2011. Facilitating efficient agricultural markets in India: an assessment of competition and regulatory reform requirements. August 2011, Final Project Report.
3. Avani Jain. Does India Really Need Subsidies? <http://theviewpaper.net/does-india-really-need-subsidies/>
4. Ganga Shreedhar, Neelmani Gupta, Hemant Pullabhotla, A. Ganesh-Kumar and Ashok Gulati 2012. A Review of Input and Output Policies for Cereals Production in India. IFPRI Discussion Paper 01159 International Food Policy Research Institute (IFPRI). P-68.
5. <http://www.fao.org/docrep/v6800e/V6800E0d.htm>
6. Recent developments in the rice sector. <http://ricepedia.org/index.php/india>
7. Reena Badiani and Katrina K. Jessoe. 2011. Electricity subsidies for agriculture: Evaluating the impact and persistence of these subsidies in India (March 25, 2011). http://www.ncsu.edu/cenrep/workshops/TREE/documents/Jessoe_electric.pdf