

SHORT-TERM AND MEDIUM-TERM PROSPECTS OF AGRICULTURAL SECTOR IN GUJARAT – SOME POLICY RECOMMENDATIONS*

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Abstract

[By mid-September, 2003 it is becoming clear that Gujarat is likely to experience a bumper crop in the year 2003-04. The State Ministry of Agriculture is looking for some concrete suggestions, advice and policy recommendations to better manage the situation likely to be created by the bumper crop this year. Falling prices in the face of bumper crop can considerably wipe out positive effect on agricultural incomes in the hands of farmers in the State. Short-term measures to avoid such a situation need to be integrated into medium term and long term development strategy for the State agricultural sector. The present paper provides some implementable policy recommendations in this context.]

I. Problem of Plenty:

By mid-September, it is abundantly clear that the monsoon in the year 2003-04 has been very good in almost all parts of Gujarat. Moreover, there is no indication of any excess rains washing out the gains from the good monsoon during the rest of the year. As a result, Gujarat can expect a bumper crop. Information on the cultivated area suggests an increase of about 9% over the normal year. Last year, i.e., 2002-03 was agriculturally a very bad year in Gujarat. Gross State Domestic Product (GSDP) from agricultural sector experienced an absolute decline of about 16% over the previous year (2001-02) at current prices and about 20% at constant prices. This was due to a fall in both cultivated area and average yield. This year, a significant improvement is likely to occur in both cultivated area and yield rate in almost all crops in Gujarat. The state can, therefore, expect to achieve a growth rate in agriculture this year that would not only compensate for the poor growth last year but also register a substantial increase over a normal agriculture year. Thus, even a conservative estimate of the increase in agricultural output in real terms during 2003-04 over 2002-03 can be placed at around 40%.

* The contents of this paper are largely based on the presentations made by the authors in a day long workshop organised by the Ministry of Agriculture, Government of Gujarat under the chairmanship of Shri Bhupendrasinh Chudasma, Minister of Agriculture and Cooperation (GoG) on 20th September 2003.

On one hand, such a high growth presents several opportunities for the state, but on the other hand, it poses serious challenges to manage such a sudden increase in the supply of agricultural output because, it can lead to crashing prices of agricultural commodities and thereby result in lower income of agriculturists. The lower income of agriculturists may lead to lower investment in land, irrigation, modern implements and improved agriculture. These chained reactions would make it extremely difficult to achieve the high growth target in the agricultural sector envisaged in the *Agro-Vision 2010*. A good monsoon resulting in sudden and substantial increase in supply of agricultural output also poses a serious challenge for macro-management of the economy. How do we ensure that the agricultural growth percolates to other sectors of the economy like industry and services to the maximum possible extent? Unless this happens, the economy would not realise the full benefits of a very good monsoon this year. The key lies; therefore, in strengthening and sharpening the linkages of agriculture with other sectors and in converting the output increases into sustainable income increases in the hands of farmers.

II. The Framework:

The problem can be posed in terms of a simple demand-supply diagram as given in *Figure 1*. D_0 is the demand curve and S_0 is the supply curve of the agricultural commodities in the year 2002-03 with the price at P_0 and output at Q_0 . The income of agriculturists would be the area $OP_0E_0Q_0$. Now, during the year 2003-04, suppose the good monsoon has increased the supply by 40% so that the new supply curve is S_1 . During the year, income of the consumers in general would also increase (based on natural growth in the rest of the economy and irrespective of the happenings in agriculture) and let us assume that the new demand curve is D_1 . But now, the price is at P_1 , which is lower than P_0 . The agriculturists' income would now be the area $OP_1E_1Q_1$.

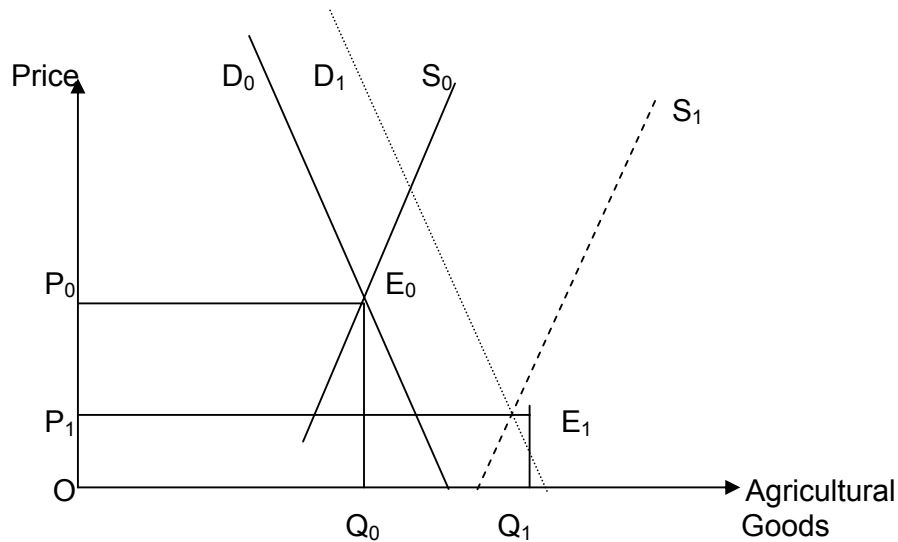


Figure 1: Demand & Supply Curves for Agricultural Goods

It can be seen from *Figure 1* that the income of the agriculturists has not increased. This may happen because of three possible reasons:

1. Demand for agricultural commodities is very steep meaning thereby that a large reduction in price is needed to induce more demand from the consumers.
2. The shift in the demand for agricultural goods on account of increase in income of consumers is to a much smaller extent as compared to the supply shift.
3. Supply of agricultural commodities is again very steep implying a very low price elasticity of supply on account of perishable nature of the commodities.

The policy response has to systematically and clearly address these three reasons for the problem. If the policymaker is able to change these three fundamental conditions even to some extent, the threat of the problem can be converted into opportunities and long-term advantages for the economy. This is demonstrated in *Figure 2* – where the initial demand and supply curves – D_0 and S_0 are the same as in *Figure 1*, but the new curves D_1 and S_1 are now based on policy interventions that change their shapes resulting in a much superior and desirable situation. The income of agriculturists given by the area $OP_1E_1Q_1$ in the year 2003-04 is obviously higher than their income last year given by the area $OP_0E_0Q_0$. This happens because the shapes and shifts of the demand and supply curves are now properly managed. Thus, the increased output is converted into increased incomes in the

hands of farmers because the prices are not allowed to fall. Moreover, the demand and supply of agricultural commodities show higher price elasticity indicating greater flexibility and increased options. This is in the long-term interest of the state agriculture and the achievement of high growth target.

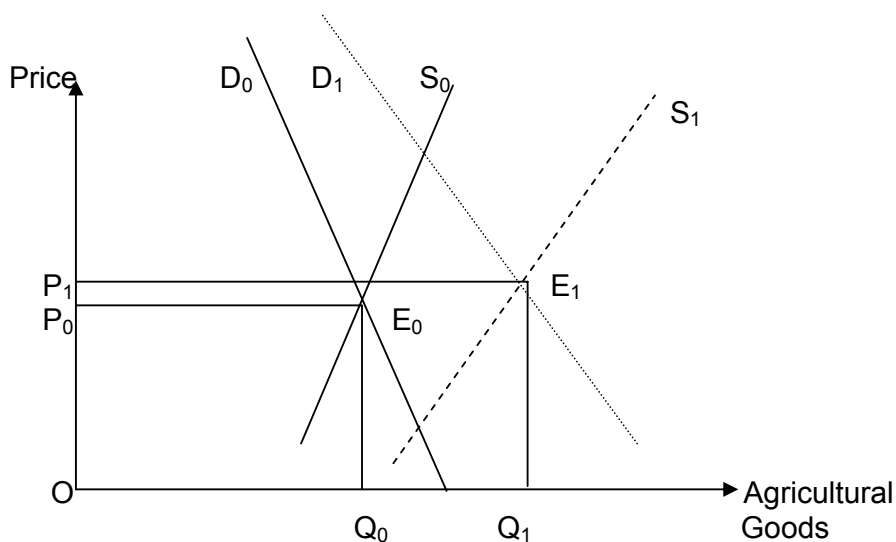


Figure 2: Effects of Policy Intervention

Before we discuss the specific policy recommendations to achieve desirable shapes of the curves as depicted in *Figure 2*, it is important to recognize some distinguishing features of Gujarat's agriculture.

1. Unlike most other state economies in the country, the direct share of agriculture in Gujarat is very low in the Gross State Domestic Product (GSDP) and not overwhelming in employment. The economy is, however, more integrated in terms of inter-sectoral linkages. As a result, performance of agricultural sector does have a substantial impact on the economy though not immediately.
2. Agriculture in Gujarat is less traditional and more commercial. As a result, output growth in agriculture gets promptly translated into corresponding growth in the service sector. Moreover, the farmers in Gujarat are commercially alert and can evaluate their options and interests in the medium term if not the long-term.

3. There is a strong cooperative culture in the agricultural sector in Gujarat. If this concept is extended to introduce some institutional reforms, it is likely to be more easily accepted in Gujarat than elsewhere.

III. Policies to Increase Demand for Agri-Products:

1. There is already an excess capacity created in the state for agro-processing through the Agro-Industries Policy. Right type of policy announcements should be made immediately to support and strengthen the weaker agro-processing industries in the state in terms of (i) quality up-gradation so that the products can easily conform to international quality standards like HACCP, ISO 9000 etc.; (ii) marketing of the finished products; (iii) availability of credit; (iv) research and development backed by policy for healthy by-products use to promote maximum possible agricultural bio-mass use¹; and (v) other infrastructural facility support, so that a significant part of the fixed cost of enterprises can be absorbed by the state, as the developed countries have been doing under 'green box' coverage to enhance competitive strength of their country's products². This would immediately spur the demand for agricultural products in the state.
2. The agricultural export zones by commodities need to be commissioned without losing any time. It will help procurement and sale of agricultural produce from the state. The state government has a plan to propose such export zones by agricultural commodities, e.g. *Til* in Saurashtra; Groundnut in Saurashtra; Castor in north Gujarat; potato in north Gujarat; mango in Saurashtra; etc. All these have to be expedited.

¹ Most agricultural produce like paddy, cotton, sugarcane etc. are quite versatile in terms extended bio-mass use, which allows competitive strength of such produce of the farmers to be extracted not only from one main product (e.g., rice, textiles, sugar etc.), but also from a variety of by-products under a healthy by-products use policy. R & D are also needed to develop new products, say for example, chickoo powder, chickoo flakes etc. to increase shelf life in chickoo, which is an important fruit of the state. This last-mentioned point is especially important when the Indian population abroad are keen on consuming and in fact in the process of producing chickoo shake or chickoo ice-cream. It means the producers of chickoo and their associations with necessary support from the state must plunder the initiative to produce innovative products out of their own produce.

² Extending supply of potable water to the jetties of Veraval and Porbandar to enable fishermen to cleanse their catch of fish properly rather than with dirty creek water, publicizing use of mushroom and soybean products through advertisements in public places like railways and public television channels provide only some of the possibilities.

3. Develop as soon as possible the agro-jetties at selected ports for exports. The ports should be selected on the basis of the hinterland potential and good road connectivity and other infrastructural facilities.
4. There is a proposal for developing cold storage facility for perishable cargo at the Ahmedabad international airport. Here the participation from the private sector is envisaged. Whatever approvals and permissions are needed should be expedited and the supporting infrastructure needed to make it operative should be quickly provided.
5. Similarly, the cold storage chain should be established at different points in the state to facilitate storage of perishable agro-products.
6. Provide more information to the farmers on the prices prevailing at different local, national and international markets for various commodities so that the farmers can take considered decisions on selling their produce or on entering into sale contracts in different markets. Computer networking and spread of telecommunication facilities should be effectively and efficiently used for this purpose.
7. It is important to provide correct and candid information on several new technologies with their expected yield under different agro-climatic conditions and application of specific inputs at specified time. The Department of Agriculture should also clearly mention other requirements of the new technologies to the farmers in order to facilitate their adoption. Again several media of communication can be effectively and efficiently used for this purpose.
8. This is the opportune time to initiate and facilitate contract farming as a major institutional reform. This is because the farmers have bumper crop in their hand. They can bargain for remunerative terms with the agro-processor. They would be better placed at present than at any future time. Secondly, contract farming does not mean only a fixed price contract for the sale and purchase of the crop output. It would also cover the whole vertical chain of value addition, e.g., input supply including credit, fertilizer, pesticides (if any), seeds, etc. on one side; and the

share of bonus in the profit or loss of the agro-processor, on the other side. In short, the state needs to facilitate smooth working of the system of contracts, which would make the two contracting parties as longer-term partners in each other's business with clear stake established on both sides. This is a natural extension of the basic concept of cooperation across the vertical value chain, as successfully practised by the Japanese corporate sector (known as *Keiretsu*). The state must provide enabling environment for the contract to be completed and ensure efficient dispute settlement mechanism at local level (e.g., with facilitating and supporting role of PRI institutions) to reduce transaction costs. In Gujarat and elsewhere, some cooperatives have been acting like companies (Gujarat Cooperative Milk Marketing Federation and Warana Sugar Cooperative Complex, where farmers have not only gone for horizontal/vertical integration or strategic alliances across their units and suitable private sector enterprises, but also established their control over wholesale and retail distribution channel, provide outstanding examples for further replication). This would certainly establish the agriculture in Gujarat on a sound commercial footing, as these cooperatives and their allies would act as natural interest organizations of the farmers, not only acting as automatic shock-absorbers in contingent situations like over-production, but also promoting demand for the whole spectrum for products possible to produce out of any agricultural bio-mass like paddy, cotton, sugarcane, oilseeds, fruits and vegetables, etc. where specific regions of the state have some comparative advantages.

9. Necessary policy support needs to be provided to the rather weak consumer cooperative movement in the state for two clear reasons. First, as mentioned earlier, such cooperatives will allow farmers and their natural allies (e.g., NGOs, SHGs, women groups, trade union organizations) to have greater control over the distribution channel of their products as well as outside products they consume. Second, greater control over the distribution channel by farmers and their allies will result in not only maximum price realization on their products, but also minimum price payment on their purchases, thus augmenting income and employment increase (rather than leakage of such opportunities to outsiders) at the local level. This would further strengthen rightward shift in the demand curve. In the same spirit, encouragement needs to be given to establishment of local

area banks by cooperatives, NGOs and even private enterprises, which are prepared to mop up local savings to actively support and augment local investment (thus increasing credit-deposit ratio). Necessary inspiration and support for this kind of strategy can be obtained from Warana Bazar and Warana Bank, which are located within the Warana Sugar Cooperative Complex in Maharashtra.

IV. Policies to Increase Price Elasticity of Demand:

10. As already mentioned above, the state government needs to look at agricultural production as the production of biomass, rather than getting constrained by linking only one product to each crop. Thus, there is a need to use the R&D efforts already successfully implemented world over to diversify the uses to which an agricultural crop is put. This can happen at two levels: (i) the crop may have several by-products like stalks, stems, etc. apart from the main product, e.g. paddy which has rice and another by-product, husk that can be used to generate electricity. Similarly, sugarcane can result in production of sugar, baggasse and molasses. (ii) The product of the crop itself can have several uses, e.g. rice can be used directly as food and indirectly as biscuits from rice bran, etc. In both these cases, the demand for the basic agricultural product would become more price elastic because now it has several uses and the flexibility of its demand would hence increase with respect to its price.

11. The government should facilitate immediate establishment of several futures trading and futures markets in different agri-products. This would increase the price responsiveness of the demand for agri-products by the industrial consumers and traders. This will be to the ultimate advantage of the farmer because his bargaining power would also increase.

V. Policies to achieve Further Rightward Shift in Supply:

12. In a global market situation under WTO, it is not possible to ignore the fact that the world market prices for most agricultural products are on a downward trend, not only because many developed countries are heavily subsidizing their agriculture in general and agricultural exports in particular, thus highly distorting the global markets for such products, but also because those countries are

engaged in continuous technological (e.g. through the bio-technology route) and institutional innovations (e.g., through industrial restructuring like mergers, takeovers etc.) to cut down both transformation cost³ (i.e., cost of physical inputs into output) and transaction cost⁴ (i.e., cost of coordination) in production and exchange. Notwithstanding the developing countries' initiative to eliminate global market distortions in agriculture, the state must initiate steps to entrust more responsibilities on its technology and management organizations to enhance capabilities of producers, processors and traders to supply quality products at highly competitive prices. Recent initiative of an ICAR-coordinated project to produce quality groundnut at competitive prices and without problems of aflatoxin provides a success story. Similar initiative needs to be taken to produce 'green' products to capture the niche market for environment-friendly products. Special efforts need to be made to scientifically establish, document and publicize the medicinal values and environmental attributes of our products. If established units are not in a position to cut down their transformation and transaction costs, the government must be prepared to alter its policy to permit greater competition and even privatisation.⁵

13. Rightward shift in supply curve does not mean augmenting supply at any cost, but allowing only efficient units to operate. Looked from this point of view, the government should not always feel complacent about large supplies, if production costs are non-competitive. This means the government must be prepared to encourage for the future production-limiting measures, as most developed countries are following, to handle situations of undesirable over-production. This seems to be the case today with quite a few crops in this country. Rapid diversification of production, sometimes along non-traditional lines, is the only viable long-run solution in such cases. Even though this is not a short-term

³ Cutting down the transformation cost is an important part of medium to long-term strategy, when productivity is rather low in our farms and agro-processing units.

⁴ High transaction cost is a serious problem, for example, of some of the cooperative sugar mills, which for political reasons often tends to over-spend on human resources, at un-remunerative salaries, thus missing the advantages of 'efficiency wages', which the successful private sugar mills in UP have been employing.

⁵ Some of the tiny and inefficient sugar cooperatives provide a case in point. If they are not prepared to follow a pragmatic input pricing policy including cane payment policy, as for example the Madhi factory has successfully done, the government must pave the way for takeover and privatisation, thus allowing more efficient and larger sized units to operate in their place.

solution to the problem in hand, homework and mental preparations must start today itself.

VI. Policies to increase Price Elasticity of Supply:

14. Increase in the storage capacity in the state godowns and private sector investments in this sector should be encouraged.
15. For perishable products, retail outlets should be planned under consumer cooperatives (e.g., under multi-purpose PACS⁶) and encouraged with necessary credit and other infrastructural facilities.
16. The marketing yards should be upgraded with latest computer technology and information system. The yards should be well connected with roads and equipped with other infrastructural facilities.

VII. Policies for Animal Husbandry, Poultry, and Fishery:

Strengthening of allied agricultural activities like animal husbandry, poultry, fishery, etc. must constitute an integral part of any medium to long-term strategy of building up vibrant agriculture in the state given the organic linkages across these segments, on the one hand, and use of these multiple sources of income and employment as a risk-hedging device, when agriculture proper is subject to tremendous risk due to weather and rainfall variations, on the other hand. Unfortunately, some of these allied agricultural activities have not received their due attention in this state.

i) Fishery :

Take, for example, the case of fisheries. The state of Gujarat has enormous and largely untapped potential not only in marine but also in inland fisheries. Apparently, the marine segment is displaying the signs of over-crowding and the inland segment the signs of under-utilization. Actually, however, both the segments are operating far below their optimum capacity, which can be reached only when the right kind of property rights are enforced, the necessary infrastructural investments are made and appropriate technologies adopted. The

⁶ Gujarat has several successful examples to follow, the Amalsad Society being one such outstanding case.

marine segment for example is badly in need of a fresh re-look: getting rid of inappropriate subsidies, massive investments in mariculture, and adequate HRD, infrastructure and R & D support to artisanal fishermen and the processing units enabling them to practise 'responsible' and value-added fisheries to claim a larger share of the premium market at home and abroad. Suitable reforms in the fisheries sector and pollution control mechanisms must induce massive private investments in this sector. At the same time, however, the Fisheries Department and the fisher folk need to be put at the center stage of control, and their capabilities substantially upgraded through fresh investments in infrastructure, technology and training, as for example, nations strong in fisheries have been doing. The state has the capability to become a large exporter of quality fish not only in the marine segment, but also in the inland and especially in aquaculture and reservoir components.

ii) Animal Husbandry:

Gujarat is the homeland of some of the best breeds of milch animals like Gir and Kankrej in case of cattle and Mehsana, Surati and Jaffarbadi breeds of buffaloes. Kutchi, Gohilwadi, Surati, and Mehsani are important breeds of goat in Gujarat. Dairy industry is well established and developed in South, Central and North Gujarat due to good networking of dairy co-operatives but is lacking in Saurashtra and Kutch regions due to missing link between the producer and consumer, inadequate procurement and processing infrastructure, unavailability of feed and fodder, veterinary services, and due to low presence of co-operatives and private sector. Since these regions face great instability in crop production due to erratic and inadequate rainfall, livestock production can provide economic stability to the farmers in the regions. More important, dairying has become an important secondary source of income and supplementary employment for millions of rural families. Therefore, dairy farming can be promoted on scientific lines by providing adequate infrastructure like supply of inputs and services, namely, feeds and fodder, animal health care facilities, AI facilities, procurement and processing infrastructure, marketing facilities and remunerative prices to the farmers through appropriate institutional and infrastructural support particularly in Saurashtra and Kutch.

Trade liberalisation and globalisation also offer new opportunities for the Gujarat dairy industry given the low cost of production of milk and proximity to milk-deficit regions. India is surrounded by milk deficit countries like Sri Lanka, Bangladesh, Middle–East and many other milk-importing countries and can export dairy products to these markets. However, in order to tap this potential the industry and government need to take appropriate measures to meet the international quality standards. Most of the milk processing plants in the state are certified under the HACCP and ISO certification but still there is a scope to improve milk quality produced at farm level. Moreover, Gujarat can also supply milk to other milk-deficit regions like eastern and north-eastern regions of the country. However, dairy industry may face increasing threat from the international players like the European Union and the USA due to heavy export and production subsidies given by these countries on the dairy products.

iii) Poultry:

India ranks fourth largest producer in eggs and eighth largest producer in poultry broiler in the world. The output of eggs is increasing at the rate of 4-6% and broiler at 8-10% per annum. The per capita consumption is 36 eggs only and poultry meat is 850 gm against the recommended consumption of 180 eggs and 10.8 Kg poultry meat per person per annum as per the Nutritional Advisory Committee. More than 100 million people are employed in this industry and this sector is growing rapidly at the rate of 15 to 20%. Poultry has made rapid progress in Central (Kheda, Panchmahal and Vadodara) and South Gujarat (Surat, Bharuch, Valsad and Dangs). About 80 percent of poultry production in the state is concentrated in these regions and account for more than three-fourth of the improved strains. Per capita availability of eggs in Gujarat is one of the lowest (14 eggs/annum) as against the national average of 36 eggs and 137 in Punjab and 136 in Pondicherry. The growth of poultry is concentrated mainly in the areas, which are near to urban centres like Ahmedabad, Vadodara, Surat, Mumbai and existence of good transport facilities and other infrastructure. However, there is tremendous potential for poultry development in the state due to increasing urbanisation and improving economic status of rural people. Moreover, there is a great scope for exporting some of poultry products like egg powder and table eggs to the Gulf countries, where there is a high demand for poultry

products but again we need to match the international quality standards. The contract farming could bridge the missing link between the producers and consumers (domestic as well as world markets) and also appropriate technology and other inputs and services as is happening in many states in the southern region of the country. The government should launch special schemes to popularise the poultry farming by providing appropriate technology, training to farmers, market information and other facilities. As the poultry industry is among the fastest growing in the world, there is a need for greater integration, better cost-effectiveness and improvement in the distribution system.