

## Do India's AEZs Need a Fresh Start?

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### Introduction

Agricultural exports from developing countries are facing stringent barriers in the form of sanitary and phyto-sanitary measures as well as technical barriers: the need of the hour, therefore, is to develop robust Agricultural Exporting Zones (AEZs) to promote organic cultivation of exportable produce. Our analysis of the future growth potential of AEZs in India is based on two planks: a theoretical cost benefit analysis and a case study approach.

The theoretical cost benefit analysis highlights the trade-off between factors that enhance profitability on the one hand and others that lead to a reduction in profitability. The case study approach complements this theoretical analysis by looking at the ground reality of AEZs in the Indian state of West Bengal.

The case study shows that practical considerations such as the lack of marketing alternatives; the monopoly enjoyed by agricultural exporters; lack of market information and institutionalised communication channels between exporters and farmers; the scarcity of suitable variable inputs such as organic manure as well as the absence of storage infrastructure adversely impact the bargaining power of farmers in negotiating prices for their produce. The study therefore implies that the theoretically plausible trade-off often does not exist in reality.

From the point of view of profitability, cultivation of organic crops is often clearly unattractive compared to non-organic cultivation, given the institutional ground reality prevalent in India. This important conclusion in turn leads to the policy recommendation that for a take-off in agricultural exports, which are becoming increasingly organic in composition, the following have to be effected – improvement in marketing information channels (computerised information, radio and television bulletins, etc), development of storage infrastructure (cold storages, warehouses, etc) and greater and cheaper availability of inputs needed for organic agriculture.

According to neo-classical trade theory, a country should specialize in the areas of its comparative advantage. Recently,

however, developments pertaining to international trade have led to the need for redrawing this hypothesis. These developments relate to the use of Sanitary and Phyto-sanitary (SPS) and Technical Barriers to Trade (TBT), promoted by developed countries in Europe and North America.

SPS barriers have been developed ostensibly to protect human, plant and animal health in a country. Accordingly, agricultural export consignments are inspected for chemical and pesticide residues. The World Trade Organization (WTO) allows countries to set their own regulations or standards provided they can link these to health objectives and outcomes (see WTO [a]). If export consignments fail to meet the regulations of the country for which they are bound, the consignments can be rejected.

TBT barriers are linked to *process* and *product specifications* which are again deemed to be necessary to meet certain criteria and objectives set for health and safety. These relate to the *colour; texture; size of the product* and *the process of cultivation*. Violation of TBT regulations can again lead to rejection of export consignments.

Allegedly, SPS and TBT barriers are newly fashioned weapons in the arsenal of developed countries which are being used by them to protect their agricultural markets from being penetrated by exports from abroad, especially from the primary products of less-developed, developing and emerging economies.

The application of TBT and SPS barriers has vast implications for export-oriented agriculture in developing countries. Farmers producing to export now have to be aware that they have to observe certain precautions and procedures for their products to be export worthy. The importance of this implication can be gauged from the fact that between August 2002 and July 2003, the US Food and Drugs Administration rejected 630 Chinese shipments of agricultural and aquatic products (see Dong and Jensen, 2004). Most of these refusals resulted from SPS violations – excessive pesticide residues, low food hygiene, contamination, etc.

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Much of the risk of being rejected on sanitary and phyto-sanitary grounds comes from the use of chemical fertilizers and pesticides during the process of cultivation. While planning our agricultural exporting zones (AEZs), these have to be taken into consideration.

Going organic to cater to export markets is not necessarily a move that will benefit our farmers and processors. It is also very important to ensure that information percolates down to the level of exporters, processors and farmers. The transmission mechanism for communicating relevant policy information and distilling it into an operational form has to be reviewed and made more efficient. Cases of information failures have to be minimized. Infrastructure, such as storage facilities, need to be improved to enhance the bargaining power of farmers; similarly, new and diverse marketing channels have to be explored to provide the farmers with more choices. Section 2 illustrates these facts through a case study.

All the above have to be coupled with a cost-benefit analysis with regard to adoption of organic cultivation for export before deciding on the location of AEZs and the export crops they should specialize in. This is the subject of Section 3. Section 4 concludes.

### CUTS Findings from AEZs of West Bengal

The AEZ survey undertaken by CUTS Calcutta Resource Centre in three districts of West Bengal brings out the importance of holistic planning and preparedness necessary for the AEZs to be a success story.

The main objective of the survey was to gain more information on the perspectives of farmers and their reaction to AEZs in West Bengal. The motivation behind such a study was to understand the reasons for the AEZ concept not becoming popular among the farm community. The important questions were: Why were the farmers not very keen to supply to agricultural exporters? What factors restrained their participation?

The districts selected were Malda and Murshidabad, housing Mango AEZs, and Siliguri, the site of a Pineapple AEZ. The growers associations, the AEZ coordinators and the exporters were interviewed. The Growers' associations interviewed were: *Uttar Banga Anarash Chasi Sangathan* (ACHAS: North Bengal Pineapple Cultivators Association), Siliguri; Mango Growers Association, Rotua 2, Malda; Malda Co-operative Society Ltd. (MALCOS), Malda; *Choa Shamabay Krishi Unnayan Samity* (Choa Shamabay Society for Agricultural Progress), Murshidabad; Geetanjali Nursery, Murshidabad; Pratima Fruits, Bidhannagar and Mallick Agro Tech, Murshidabad.

The exporters surveyed were: Calypso Bengal Foods Private Limited, Siliguri; Dabur Foods Limited, Siliguri; Pineapple Merchants Association, Siliguri; Malda Mango Merchants Association, Malda; Farakka Progressive Fruit Producers,

Preservation and Exporting Co-operative Society Limited, Murshidabad; Gita Fruit Products, Malda; *Amra Sabuj* (We are Green), Murshidabad; and Deep International.

The findings showed that although the awareness of AEZ issues among small farmers was lacking, this was not the prime reason for the failure of AEZs in West Bengal. In Malda, the Horticulture Department has done extensive number of awareness and training programmes for farmers to inform them about agricultural practices that promote exports: high density cropping; intercropping; irrigation management; fertilizer management; pesticide management needed for export quality fruits etc. The farmers of the surveyed districts were confident of producing export quality produce.

The problems with AEZs lay elsewhere. A case study from Malda brings to light the problems faced by the farmers (see Box 1).

#### Box 1: Mango Exports from Malda – A Case Study

Loknath Kumar, Secretary, Malda Mango Growers' Association; Saifuddin Ahmad; Ujjal Chowdhury and a few other mango growers had received verbal assurance from prospective exporters that large quantities of mangoes from their orchards would be procured if they were of export quality. The growers duly complied with the specifications provided by the exporters – organic farming and all other measures needed so that the desired size, hue and maturity of the fruits resulted. The process resulted in an increase in input costs per unit area cultivated. .

The farmers kept waiting for the exporters to pick up the produce from their orchards, even beyond the deadline, till the end of the season; by this time the market price of the product had fallen sharply from Rs. 12 to Rs. 8 per kg. The exporters had not honoured their commitment. As a result, the growers who had made high investments got very low returns. This made the growers very wary of exporters.

This case study showed that due to the absence of formal and legal deals/contracts between the farmers and exporters, the farmers were at the mercy of exporters. There is no assured market for export quality produce. The organic produce and the produce grown traditionally sell in the same market. In the existing market system, with no systematic channels for marketing the former, a paradoxical result of the latter fetching both a higher price and a higher yield is witnessed which brings in more profits for the farmer.

In situations where good marketing institutions exist for organic crops, such as in developed countries, organic produce is characterised by lower yields and higher prices; it thus becomes rational for farmers to undertake organic production when the magnitude of the price premium (brought about by the better quality of organic produce) is large enough to compensate farmers for lower yield.

It is easy to see that such trade-offs were ruled out by poor marketing institutions for organic produce in Malda; thus the question of higher profits from organic production did not arise. This explains the reluctance of farmers to produce export quality produce, even though they have the requisite know-how.

Moreover, the choice of markets available to farmers is scanty as there are very few exporters/processors operating in a district. The absence of sufficient competition is a major reason for the arbitrary dealings of the exporters; farmers have very few alternatives to turn to. The lack of a system which provides market information on the specific requirements of various export markets at different times of the year as well as meagre sales opportunities aggravate the problem. Thus, the lack of assured and efficient markets and other information mechanisms seems to be impeding the success of AEZs.

The next major constraint is the lack of adequate infrastructure. The number of cold storages is inadequate for storing the easily perishable horticultural produce; lack of storage facilities implies lower bargaining power and, therefore, the inability to negotiate good prices. The number of pack houses is insufficient and small; moreover their effectiveness is crippled by the absence of trained manpower and modern facilities. Quality testing centres needed to certify export specifications/requirements have not yet come up. The first centre has just been formed in Bidhan Chandra University of Agriculture, Kalyani.

Poor connectivity is another problem: in Farakka, which is 40-50 km from Malda and 90-100 km from Berhampore, there is a need to improve the connectivity with other areas. Yet another major deficiency impeding the development of export oriented organic agriculture is the lack of availability of organic manure and pesticides in the interior of districts.

This study, therefore, brought to light the different facets of the AEZ failure and re-established the fact that there is a need to look at the holistic nature of the problem and the underlying varied dimensions—the lack of cost-benefit analysis; the adoption of systematic criteria for selection of sites for cultivation of organic produce; the absence of training and information (market, policy and technical information); the lack of storage facilities diminishing the bargaining power of farmers vis-à-vis traders and exporters and last but not the least, the poor infrastructure, especially that relating to connectivity.

### Cost Benefit Analysis of Organic Farming

Irrespective of the scale of application of fertilizers and pesticides, there is always a risk that SPS standards relating to chemical residues or contaminants might not be met. The solution for farmers in developing countries producing to export is to resort to organic farming. In India this is being organized through agricultural exporting zones (AEZs) which

have been developed by government officials as well as processors to produce targeted items for export. However, there are various additional costs of cultivating organic crops — they have lower yields and they require labour intensive cultivation and un-remunerative crop rotation practices.

In order to avoid the use of pesticides it might be necessary to plant disease resistant genotypes, which are more expensive. There is no doubt that organic products fetch higher prices in international markets. However, niche markets for organic products are still not very large and in many cases the price differential between organic products and their non-organic counterparts is small. To sum up, the gains from going organic are: considerable lowering of the risk of consignments being rejected due to SPS regulations and the possibility of attracting higher prices. However, the sources of loss are also significant.

The cost benefit analysis indicates for a particular crop whether a switch from conventional to organic cultivation is beneficial for the farmer. This is done by comparing profits from conventional production (in other words the private benefit from such production) to the private benefit from organic production. The latter is equal to the profit from organic production for the crop under study less the income losses due to crop rotation practices (relative to the conventional scenario) that accompany organic cultivation.

Let  $Y$ ,  $p$ ,  $C$  and  $L$  denote yield, price, cost of cultivation and loss from crop rotation associated with organic farming with subscripts c and o being used to refer to conventional and organic farming. Cost Benefit analysis will prescribe a switch to organic farming only if:

$$p_c Y_c - C_c < p_o Y_o - C_o - L$$

$$\Rightarrow \frac{Y_c}{Y_o} \left[ \frac{C_o - C_c}{R_c} + \frac{L}{R_c} + 1 \right] \leq \frac{p_o}{p_c}$$

$R (= py)$  is the total revenue from cultivation.

If the above is used as equality, then the associated value of the organic to conventional price ratio is the minimum level of that ratio which is consistent with a prescription for a switch to organic farming. This minimum level is dependant on and increasing in three factors: conventional yield as a proportion of organic yield, the cost (of cultivation) differential between organic and conventional farming as a proportion of revenue from conventional cultivation and the losses due to crop rotation associated with organic farming as a proportion of conventional revenues. It will also be always greater than 1 (a price premium is needed for organic products) if we assume that costs of production are higher and yields are lower in the case of organic farming.

Using data collected from experimental farms and those on prices for conventional produce, the planner can calculate the minimum organic price to conventional price ratio that makes a switch to organic farming beneficial for the farmers.

If the existing price ratio is below the minimum calculated ratio then the planner would advise the farmer not to make the switch. Otherwise, a switch would be deemed desirable. There is nothing permanent about such decisions; over the course of time with economic development, the demand for organic products is expected to increase with a consequent increase in the mentioned price ratio. Thus, a switch to organic farming for a particular product in a given region might not be deemed desirable now, but might become desirable in the future.

## Conclusion

With agricultural exports from the developing world being constrained by sanitary and phyto-sanitary measures as well as technical barriers to trade, development of Agricultural Exporting Zones (AEZs) for promotion of organic cultivation of exportable produce is the need of the hour. Our analysis of the future growth potential of AEZs in India is based on two planks: a theoretical cost benefit analysis and a case study approach.

The theoretical cost benefit analysis highlights the trade-off among factors that enhance expected profitability on the one hand, and others that lead to a reduction of profitability.

Among the factors that enhance profitability are the price premium enjoyed by organic agricultural products over their inorganic counterparts and a considerable lowering of the risk of consignments being rejected by importing countries through SPS regulations. The factors that reduce profitability include comparatively lower yields of organic products and the need for crop rotation that is often necessarily profit reducing.

The case study approach looks at the ground reality of AEZs in the Indian state of West Bengal and concludes that

practical considerations such as the lack of marketing alternatives; the monopoly enjoyed by agricultural exporters; the lack of marketing information and institutionalised communication channels between exporters and farmers; the scarcity of suitable variable inputs such as organic manure as well as the absence of storage infrastructure adversely impact the bargaining power of farmers in negotiating prices for their produce. The findings imply that the theoretically plausible mentioned trade-off often does not exist in reality.

From the point of view of profitability, cultivation of organic crops is often clearly unattractive compared to non-organic cultivation, given the institutional ground reality prevalent in India. This important conclusion in turn leads to the policy recommendation that for a take-off in agricultural exports, which are becoming increasingly organic in composition, the following have to be effected – improvement in marketing information channels (computerised information, radio and television bulletins etc.), development of storage infrastructure (cold storages, warehouses, etc) and higher and cheaper availability of inputs needed for organic agriculture.

It is only when these pre-conditions for take-off are attained that the farmer will actually have a real choice between organic and non-organic cultivation. It is only then that the utility of modern techniques of cost benefit analysis in choosing crops and areas for organic cultivation and in suitably promoting agricultural exports will be realised. Thus, the policy agenda should concentrate on the following sequential procedure: bring about changes in the institutional ground reality so that pre-conditions for profitable organic cultivation are attained and follow this up with collection of data and analyses which assess the trade-offs between organic and inorganic cultivation for different areas and different crops.

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