

BENEFIT-COST ANALYSIS

# TRADE

Assessing policy interventions for  
expanding exports and trade in

**RAJASTHAN**

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**RAJASTHAN  
PRIORITIES** AN  
INDIA CONSENSUS  
PRIORITIZATION  
PROJECT



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# Enhancing Exports and Trade

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## Rajasthan Priorities An India Consensus Prioritization Project

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## Academic Abstract

It is imperative for India to capture larger shares of global markets for growing at sustained high rates. This would require Indian exports to become globally competitive backed by suitable policies. This paper examines the feasibility of three policy interventions for implementation in India's north-western state of Rajasthan for enhancing the competitiveness of its exports. Noting the context of Rajasthan being a part of the transport connectivity landscape of the Delhi-Mumbai Industrial Corridor (DMIC), the interventions include development of an inland container depot and container terminal; a free trade warehousing zone (FTWZ); and scientific facilities for testing and certifying organic food exports. While the first and third interventions yield strong Benefit Cost Ratios, the second produces moderate estimates. Based on the computations and available evidence, the paper recommends all three interventions including the second given the latter's fundamental utility.

## Policy Abstract

### The Problem

Enhancing exports and increasing participation in global production networks is an important prerequisite for the Indian economy to grow at sustained high rates. Unless exports increase, and Indian producers integrate deeper in global and regional value chains, India would not be able to capture major shares of global markets. Obtaining higher shares requires Indian exports to be more competitive. Enhancing competitiveness requires expansion of trade and export-enhancing infrastructure in Indian states.

Rajasthan is India's largest state in land area. It is a leading producers of agricultural commodities, particularly oilseeds and spices, dairy products, precious and semi-precious minerals and metals (e.g. gold, silver, limestone, copper, marble), textiles, handicrafts and gems and jewellery. Being a hinterland state, its challenges of economic development are partly conditioned by geography.

Rajasthan is working on increasing competitiveness of its exports by augmenting modern infrastructure and export-oriented capacities and reducing costs of doing business. Its objective is to increase its share in national exports from 2% right now to much higher levels<sup>1</sup>. It's essential for the state to implement policies for strengthening its trade-enabling infrastructure. These include increasing capacity to trade by handling greater volume of trade traffic through dedicated cargo hubs like inland container depots, slash logistics cost through state of art warehouses and encourage benchmarking of organic exports to global quality standards.

### Intervention 1 Development of an Inland Container Depot and Container Terminal.

#### Overview

Inland container depots (ICDs) are also referred to as dry ports. These inland ports are essential parts of the inland trade distribution system and are equipped for handling a variety

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<sup>1</sup> 'Rajasthan aims to double exports to Rs 72,000 crore by 2022', The Times of India, 21 February 2017; <https://timesofindia.indiatimes.com/city/jaipur/rajasthan-aims-to-double-exports-to-rs-72000-crore-by-2022/articleshow/57276163.cms>

of cargo. Most dry ports offer customs facilities and act as clearance points for cargo moving from hinterland origins to seaports. These ports enable multimodal transport operations by connecting rail, road, air and inland water traffic and reducing congestion on a particular mode of traffic<sup>2</sup>. Dry ports are best utilized if located close to commercial and industrial centres and intersections of rail, road and inland waterways. Among Asian economies, China, Korea and Thailand have multiple dry ports. India too has an extensive network of ICDs managed by the Container Corporation of India (CONCOR).

Rajasthan currently has three ICDs at Jodhpur, Jaipur and Kathuwas. But the importance of having more ICDs for the state can hardly be exaggerated. Another ICD equipped with a container terminal and strong multimodal transport linkages would encourage movement of goods and exporters by bringing down logistics costs.

The importance of the proposed intervention increases in the light of the upcoming Delhi Mumbai Industrial Corridor (DMIC) – India’s most exhaustive infrastructure initiative connecting the cities of Delhi and Mumbai through land and rail routes and spanning six states of the country. Economic activities are going to increase manifold as more industrial centres, business hubs and smart cities come up along with progress on each component of the corridor.

As one of the DMIC states, Rajasthan is well poised to reap economic opportunities from the corridor by backing up its own infrastructure capacities. The proposed ICD – located in close proximity to Jaipur and DMIC – is visualised to augment the state’s logistics capacity. The structuring of the intervention is planned in sync with CONCOR’s network and feeder linkages with the Indian Railways.

## **Implementation Considerations**

The facility is envisaged over an area of 120 hectares (1.2 million square meters). This is a bit higher than the size of the Dadri dry port facility of CONCOR located in neighbouring Uttar Pradesh, as well as that of Khatuwas in Rajasthan. The throughput capacity of the facility is pegged at 500,000 TEU, which is almost same as Dadri’s. We assume capacity utilization of more than 60%, as we expect Rajasthan’s efforts to improve doing business conditions to

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<sup>2</sup> Hanaoka and Regmi (2011)

progressively bear fruit. However, there are risks of such efforts losing momentum and affecting efficiency of the facility. There are additional risks involved in delays of obtaining land, escalation of costs of development and delay in obtaining train operation license. These can be overcome by the CONCOR's vast experience of running dry ports in India and Rajasthan.

## Costs

Fixed costs are substantive and include purchase of land, its development, costs of handling equipment and train operation licenses. Current farmland prices close to Japiur and DMIC are noted<sup>3</sup> and a built-in premium has been applied over and above these for arriving at land costs of Rs 45 crore, which is to be staggered over three years. The benchmark for development costs are those for Dadri, which date back to 2004<sup>4</sup>. We assume the costs to have doubled. We do note though that developers can avail several fiscal incentives for the facility and expect these to somewhat reduce development costs. We add handling equipment costs to development costs in the 5<sup>th</sup> year and expect these to have more than doubled from those for Dadri. One time container train operator license costs – for running trains to various destinations from the point of origin - are Rs 500 million (Rs 50 crore) as mandated by Indian Railways<sup>5</sup>. While fixed costs run their course for first five years, operating costs commence from the 6<sup>th</sup> year (Figures 1a and 1b).

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<sup>3</sup> Market intelligence property price websites such as <http://www.99acres.com>

<sup>4</sup> ESCAP (2015)

<sup>5</sup> ESCAP (2015)

Figure 1a

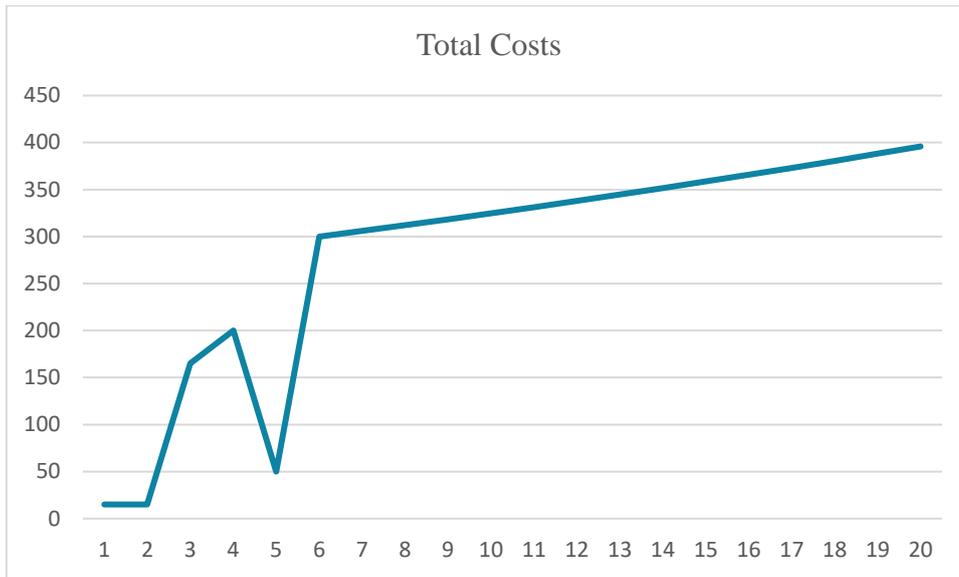
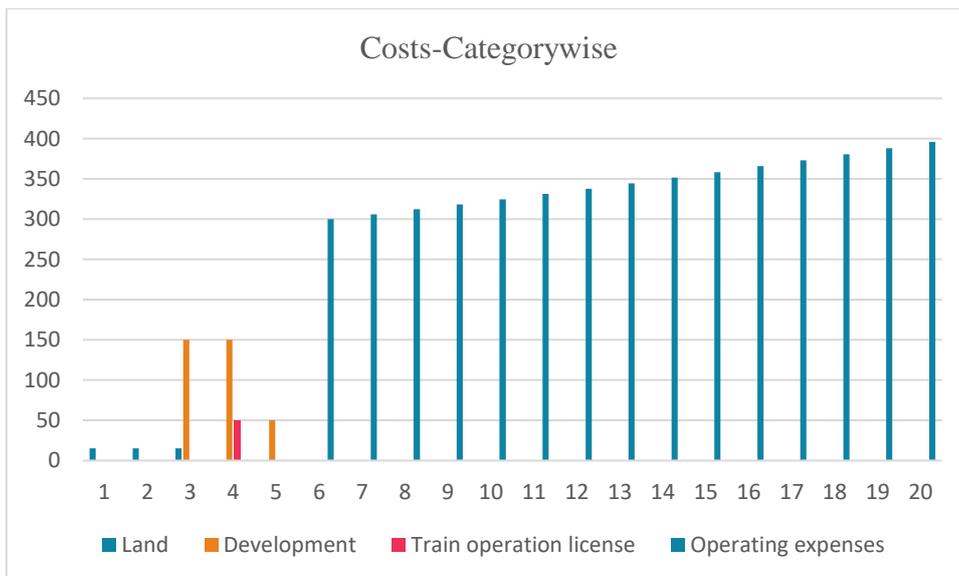


Figure 1b



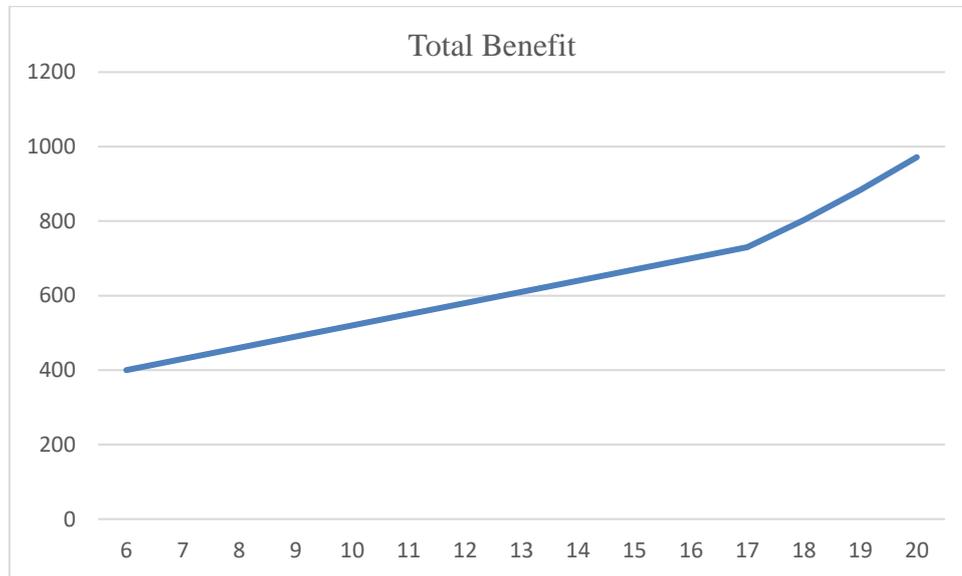
Operating expenses, or variable costs for the project are benchmarked on current operating costs of the Dadri terminal. We extrapolate these with a built-in multiplier accounting for initial estimates as well as their progressive annual escalation.

## Benefits

Revenue computations are benchmarked to current capacity utilisation at the Dadri terminal and revenues earned therefrom. We note efforts by the state government in improving doing business conditions and expect capacity utilisation to be higher than Dadri. But we anticipate

a lower annual throughput growth of 5%, since the facility is to pick up traffic gradually. Our initial expectations are revenues of Rs 400 crore (Figure 1c).

Figure 1c



## Intervention 2 Establishing a Free Trade Warehousing Zone (FTWZ)

### Overview

Free Trade Warehousing Zones (FTWZs) are customised logistic facilities constructed close to airports, seaports and dry ports for facilitating cargo movement. According to the latest Foreign Trade Policy (2015-2020) of the Government of India, these are important parts of the country's trade-enabling infrastructure and are to work as international trading hubs<sup>6</sup>. The FTWZs are not only customised warehouses for specific industries, but also comprise a host of integrated facilities essential for facilitating trade such as cargo storage and cooler facilities, transport connections with the domestic tariff area and advanced cargo tracking and information facilities.

While being different from Special Economic Zones (SEZs) that focus on manufacturing, FTWZs – through their emphasis on trading and warehousing activities – are key logistics

<sup>6</sup> <http://dgftcom.nic.in/exim/2000/policy/chap-7A.htm>

developments that comprise trade facilitation activities of a nation. The role of such a facility in Rajasthan is critical in the light of the benefits it can bring for various exporters. Other major exporting states in India, such as Maharashtra and Tamil Nadu, already have FTWZs.

## Implementation Considerations

We visualise the zone to be of around 125 acre, i.e. roughly 50 hectare, based on existing FTWZs like Arshiya at Panvel in Maharashtra and upcoming FTWZs like Nanguneri in Tamil Nadu<sup>7</sup>. We also note the importance of the zone being located close to the DMIC for facilitating crucial backward and forward linkages. Building a facility of this kind from the scratch involves multiple risks. These include delays in obtaining land, prolongation of time taken for developing facilities, as well as the time taken for materialization of ‘mother’ projects like the DMIC, which is expected to feed the demand for the zone’s facilities. While these might thwart some investors, the attractive FDI policy envisaging 100 per cent foreign investment in these zones as well as duty free import of development material, should encourage many. The encouragement should be more given that current policies allow re-sale, re-invoicing and re-export of goods from the FTWZs without restrictions<sup>8</sup>.

## Costs

Land and development – fixed components of the costs of the intervention – are computed separately. For land, market prices of farmland close to the upcoming DMIC are benchmarked with a built-in multiplier – similar to intervention 1. The costs of obtaining are assumed to be spread out over 3 years. We estimate development costs on the basis of existing warehouse development cost estimates<sup>9</sup>. These are at Rs 500 crore and assumed to be staggered over 4 years (Figure 2a and 2b).

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<sup>7</sup> ‘Free Trade and Warehousing Zone takes off’, The Hindu, 24 November 2017; <http://www.thehindu.com/news/national/tamil-nadu/free-trade-and-warehousing-zone-takes-off/article20746384.ece>

<sup>8</sup> As in 5 above. The current tax treatment of sales to Domestic Tariff Area after introduction of GST needs to be analysed separately.

<sup>9</sup> PWC (2011)

Figure 2a

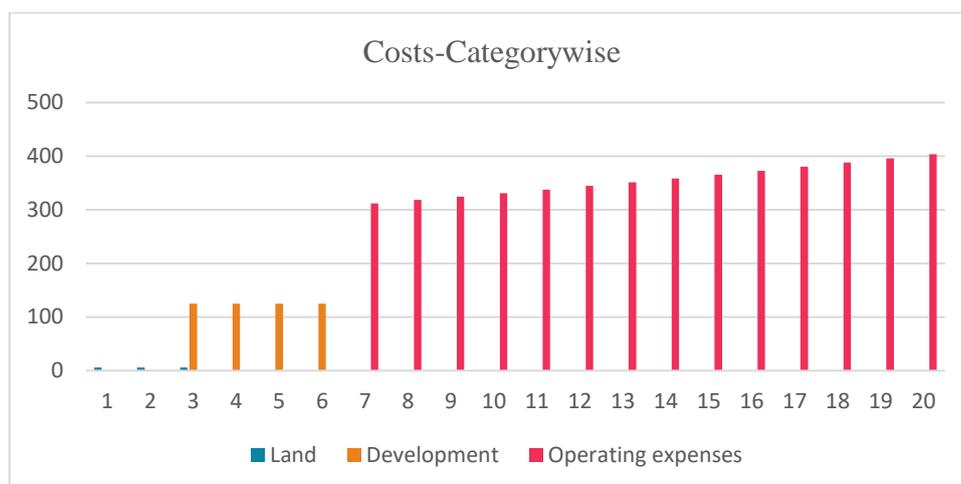
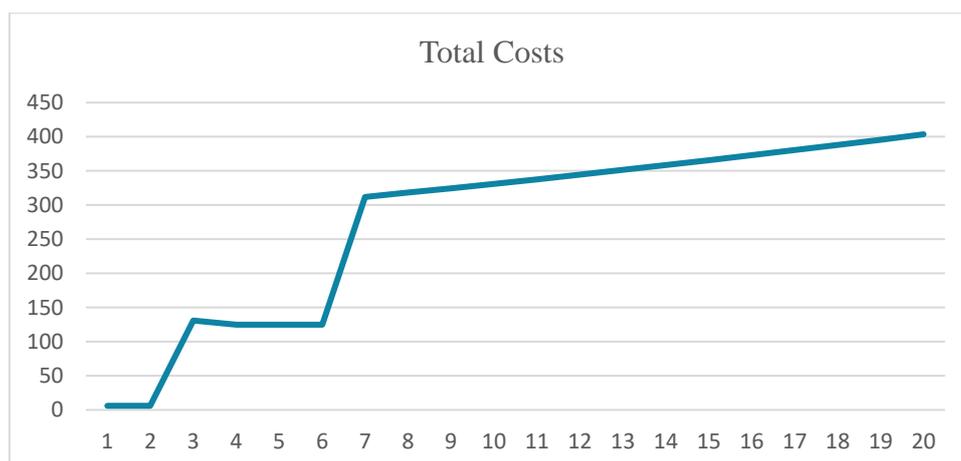


Figure 2b



It's important to note that this is an intervention with high operating costs given the servicing costs required for maintaining high standards of logistics facilities. We assume these expenses at 60 per cent of total development costs, yielding an annual operating cost of more than Rs 300 crore. We further assume 2% cost escalation each year. Indeed, these higher operating costs keep total costs high (Figure 2b) even after commencement and is expected to be matched by benefits only from the 12<sup>th</sup> year onward.

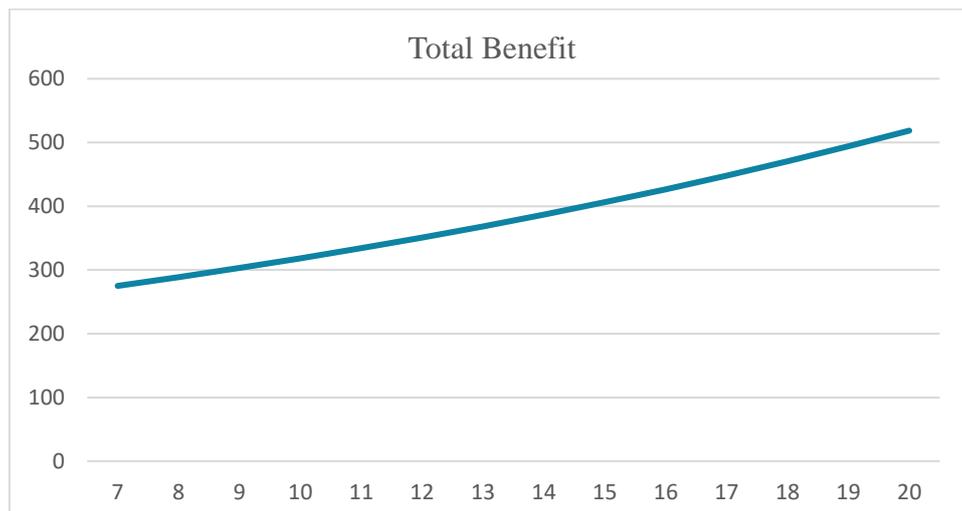
## Benefits

Revenues are computed on the basis of indicative warehousing charges for FTWZs<sup>10</sup>. While computing revenues on the basis of warehouse area and the returns on a per capita ground

<sup>10</sup> "Proposed acquisition of operating warehouses at Arshiya FTWZ", 23 November 2017, Ascendas India Trust.

area basis, we assume 70% utilisation of capacity based on continuing improvement in business conditions and good demand. We expect annual revenue of Rs 275 crore from the first year of operations – i.e. the 7<sup>th</sup> year– and further project 5% increase in revenues each year (Figure2c).

Figure 2c



## Intervention 3 Scientific testing and certification facilities for organic product exports

### Overview

The intervention comprises establishing a laboratory equipped with latest scientific testing facilities for certifying quality standards of organic food exports from Rajasthan to the EU, North America, and other major markets in Asia, including Australia. The laboratory will greatly enhance prospects of organic food exports as these need to conform to the rapidly upgrading quality standards in global markets. The facility will provide certification according to the standards set out by the National Programme on Organic Production (NPOP) of the Government of India, which has been granted equivalence by EU and US, and is regulated by the Agricultural and Processed Food Development Authority (APEDA) under the Foreign Trade Development and Regulation (FTDR) Act. It will also augment the organic food certification capacities in the state – primarily that of the Rajasthan Organic Certification Agency (ROCA), which is certifying according to the NPOP.

We expect the facility to encourage a part of organic food production currently targeted at the domestic market to divert to exports. The shift will be encouraged by the higher price premium for organic food products in the global market. Rajasthan is expected to be one of the leading states contributing to the robust rise of organic food exports from India<sup>11</sup>, primarily due to its large cultivation of oil seeds, which are prominent among organic food exports. At present, Rajasthan has the third largest area under organic food cultivation in India and is the fourth largest state in the country in organic food production<sup>12</sup>. More certification facilities will incentivize exports and increase overall organic food production from the state.

## Implementation Considerations

The intervention is visualized over a shorter period than the two earlier ones. Beginning from 2019, it is expected to commence operations from the fourth year. It is to develop over 5 acres around Jaipur. Even though land requirements are not large, there could be delays involved in acquisition and construction. There might also be delays in getting accreditations with Export Inspection Councils. These can be overcome by proactive steps on part of the state government as well as key product councils like APEDA.

The main indicator for the success of the intervention is increase in organic food exports it is able to achieve. Quality certification is necessary for Indian exports in gaining wider and deeper global market access. Without such certification, Indian exports, particularly the relatively more perishable food exports targeting global consumers with distinct tastes and preferences, cannot penetrate deeper in global markets and increase national and state shares in global food exports. The 'new' exports generated by the facility through substitution from domestic market are its primary benefits. As the evidence in this respect shows, the role of quality certification for facilitating market access for developing country exports is strong, particularly in today's context where advanced country domestic quality standards are continually upgrading.

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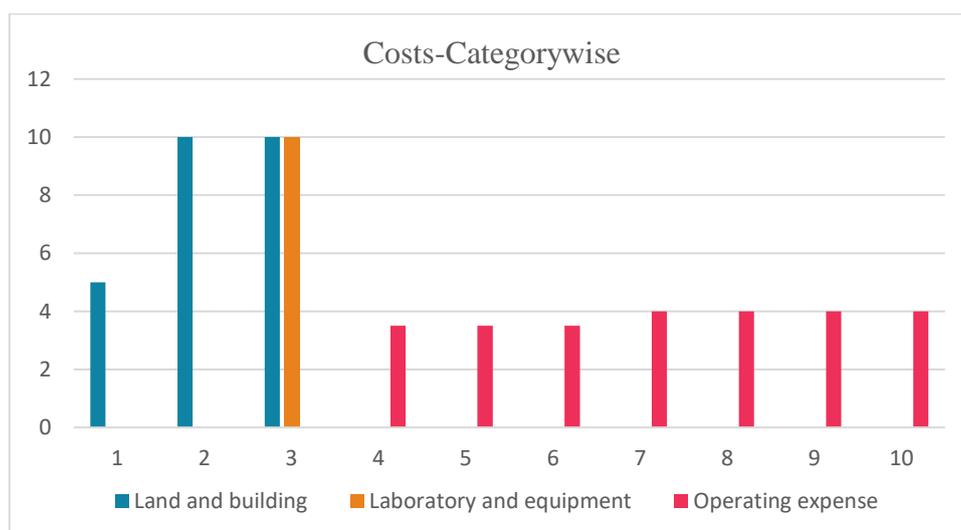
<sup>11</sup> 'Indian organics food market poised for growth', Pure&EcoIndia, 10 October 2015; <https://www.pureecoindia.in/indian-organic-food-market-poised-for-growth/>

<sup>12</sup> EXIM Bank (2015)

## Costs

Fixed costs comprise land and building and laboratory & equipment. The costs are to be rolled out over the first three years. The assumptions for land and building are based on market prices for industrial land in reasonable proximity to Jaipur and the national highway<sup>13</sup>. We expect the combined costs to be Rs 25 crore. The Food Safety and Standards Association of India (FSSAI)'s cost assessments for upgrading state food laboratories<sup>14</sup> are benchmarked for computing costs of laboratory and equipment with the estimates upgraded by a multiplier of 25 per cent. The testing equipment is expected to be put in place within one year after obtaining land and building, and are therefore, to be done by the 3<sup>rd</sup> year. From the 4<sup>th</sup> year onward, project costs reduce to operational costs assumed as a proportion of total fixed costs for first 3 years and progressive increase annually thereafter (Figures 3a and 3b).

Figure 3a



<sup>13</sup> Market intelligence reports on property prices

<sup>14</sup> SoFTel - Strengthening of Food Testing Laboratories; Food Safety and Standards Association of India (FSSAI).

Figure 3b



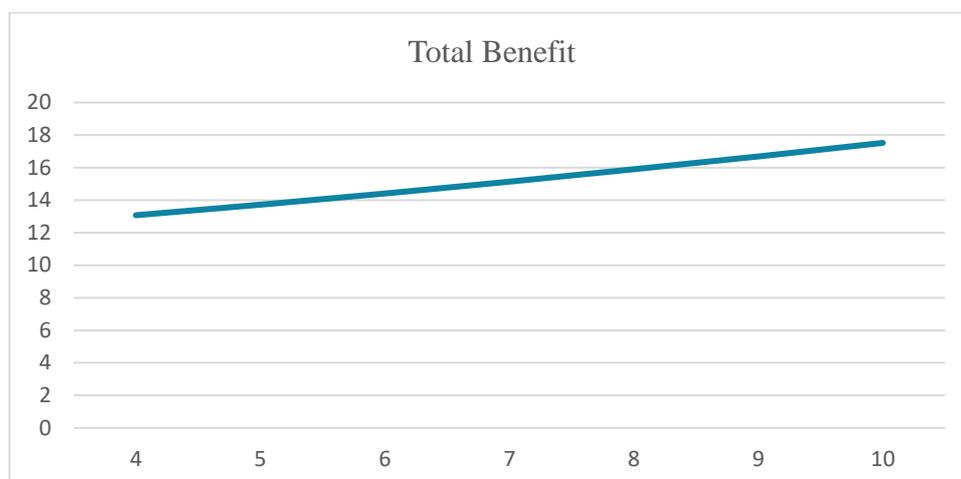
## Benefits

Additional exports generated by the facility, and the revenue fetched therefrom, are based on the benchmark of current estimates of organic food exports from India for 2015-16<sup>15</sup>. We assume Rajasthan's share in these exports to be at around 15% based on the state's area under food cultivation and organic food production<sup>16</sup>. Our assumption of these exports, and the increase of another 15% in them by volume post-facility is based on overall robust projection for India's organic exports, Rajasthan's cultivation of organic oil seeds, and high price premium for organic food in global markets. We assume 30% price premium for substituted exports and expect more exports to be substituted over time leading to a progressive increase of 5% in export revenues each year (Figure 3c).

<sup>15</sup>[http://apeda.gov.in/apedawebsite/organic/Organic\\_Products.htm](http://apeda.gov.in/apedawebsite/organic/Organic_Products.htm)

<sup>16</sup> EXIM Bank (2015)

Figure 3c



## Summary BCR Table (5% discount rate)

### BCR Table

Interventions	Cost (INR crore)	Benefit (INR crore)	BCR	Quality of Evidence
Development of an Inland Container Depot and Container Terminal.	3,137	4,853	1.5	Strong
Establishing a Free Trade Warehousing Zone (FTWZ)	3,007	2,736	0.9	Strong
Scientific testing and certification facilities for organic product exports	50	75	1.5	Strong

## Introduction

India's current shares in global merchandise trade, and exports, are only 1.9% and 1.6% respectively<sup>17</sup>. Its current rate of GDP growth of 7% plus makes it the fastest growing among the major economies of the world. Maintaining the current rate of GDP growth, or shifting to a higher trajectory, requires India to expand its share in global trade and exports, as economic activity generated by the domestic market would be insufficient for maintaining the growth momentum in the long-run.

Enhancing India's share in global trade is contingent on its exports becoming more competitive. Domestic factors have been major determinants of India's export competitiveness. These comprise factors influencing competitiveness at borders as well as beyond borders. Several of the latter connect to capacities of individual Indian states.

India's north-western state of Rajasthan is the country's largest in land area. Characterised by large stretches of arid desert as well as hilly tracts, Rajasthan shares common borders with India's north-western neighbour Pakistan. Being a hinterland state, Rajasthan's challenges of economic development are partly conditioned by its geography. At the same time, geography provides it unique economic opportunities. The state is one of the leading producers of agricultural products, dairy products, oilseeds and spices, precious and semi-precious minerals and metals (e.g. gold, silver, limestone, copper, marble), textiles, handicrafts and gems and jewellery. In addition, its rich mediaeval history and varied culture has made it a hub of tourism.

While exports are natural advantages of coastal states, a hinterland state like Rajasthan can accelerate exports if equipped with appropriate infrastructure, particularly logistics capacities. One of the disadvantages that Rajasthan and hinterland states in India have traditionally suffered from is lack of adequate infrastructure for transporting goods to seaports. Such absences are significant for Rajasthan given its prospects in exports and production of organic food products, dairy products as well as agro-processed segments like floriculture.

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<sup>17</sup> WTO, Trade Profile, India.

The context for the current policy interventions proposed for Rajasthan arise from its efforts to fix an export promotion strategy for doubling exports over a five year time frame. The core elements of this strategy are to focus on increasing export competitiveness through modern infrastructure and export-oriented capacities. The strategy should be able to substantially increase the share of exports from Rajasthan in India's national exports from only 2% right now to much higher levels<sup>18</sup>.

One of the distinct advantages that Rajasthan enjoys, and one which should serve its economic aspirations meaningfully in the long-term, is its being part of the Delhi Mumbai Industrial Corridor (DMIC). Spanning across six states in India's west, north and central regions – Gujarat, Haryana, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh – the DMIC is an ambitious infrastructure development programme<sup>19</sup>. Built in collaboration by India and Japan, the ambitious connectivity project has an estimated investment of US\$100 billion and envisages a bunch of smart cities coming up along the dedicated western freight corridor connecting the two cities of Delhi and Mumbai. Rajasthan's future development prospects, particularly its goal of increasing global competitiveness of its exports, needs to be integrated into the economies of scale that it will enjoy by being a core part of the DMIC.

It is in this specific context that three interventions are discussed in this paper. The importance of logistics – both in terms of capacities as well as qualities – can hardly be overstated. At the same time, export-enabling infrastructure cannot overlook the importance of key facilities like warehousing services. And finally, the critical issue of conforming to quality standards in global markets become significant for ensuring competitiveness of exports.

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<sup>18</sup> 'Rajasthan aims to double exports to Rs 72,000 crore by 2022', The Times of India, 21 February 2017; <https://timesofindia.indiatimes.com/city/jaipur/rajasthan-aims-to-double-exports-to-rs-72000-crore-by-2022/articleshow/57276163.cms>

<sup>19</sup> <http://dmicdc.com/about-DMICDC>

## Intervention 1: Development of an Inland Container Depot and Container Terminal

### Background and Evidence

Dry ports – variously referred to in economic development, infrastructure and public policy literature as inland container depot or container freight stations – are defined as: ‘...a logistics centre connected to one or more modes of transport for the handling, storage and regulatory inspection of goods moving in international trade and the execution of applicable customs control and formalities’ (Article 1 of *Inter-governmental Agreement on Dry Ports*)<sup>20</sup>. Dry ports are inland ports and essential parts of the inland trade distribution system and are equipped for handling a variety of cargo, both through containers as well as otherwise. Most dry ports offer customs facilities and in this respect act as clearance points for cargo moving from inland origins to seaports on a country’s maritime border.

Dry ports, apart from connecting landlocked hinterland territories to global trade, also produce distinct advantages of enabling multimodal transport operations that reduce congestion on particular modes of traffic<sup>21</sup>. Facilities of dry ports are best utilized if they are located close to inland city/provincial state capitals, industrial centres, intersections of rail, road and inland waterways networks<sup>22</sup>. Dry ports have come up in various parts of Asia, including China, Korea and Thailand. Birgunj in Nepal is an example of a major dry port in India’s neighbourhood. India too has an extensive network of several inland container depots (ICDs) managed by the Container Corporation (CONCOR) of India. Most of these dry ports deal with exports and imports and have facilities for customs clearance, warehousing and container parking. Under the existing dry ports network, the state of Rajasthan has three terminals: Jodhpur (*Bhagat Ki Kothi*), Jaipur (*Kanakpura*) and *Kathuwas*.

The importance of developing an additional inland container depot or dry port in Rajasthan, which is also equipped with the facility of a container terminal, and is dedicated to exports, can hardly be exaggerated. Such a facility would significantly benefit exporters by bringing down logistics cost and would increase global competitiveness of exports originating from the

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<sup>20</sup> ESCAP (2015), ‘Planning, Development and Operation of Dry Ports of International Importance’, UNESCAP, Bangkok, November 2015; Section A, Page 4.

<sup>21</sup> Hanaoka and Regmi (2011)

<sup>22</sup> ESCAP (2007)

state. Indeed, for a large land-locked state like Rajasthan, more dry ports would only add to facilities that would incentivize exports.

The proposed intervention has been visualized in the context of the upcoming Delhi Mumbai Industrial Corridor (DMIC) and the fact that it can be located in close proximity to the corridor. This is in line with the earlier mention of conditions that are necessary for good performance of dry ports, which include proximities to rail and road networks. The structuring of the intervention – given India’s current profile of development of ICDs – has to be modelled in sync with the network of CONCOR and its feeder linkages with the Indian Railways. Integration into these networks will enable the intervention to exploit the synergies between existing infrastructure and upcoming facilities.

## Description

The emphasis of the facility is on the multimodal transport mix it would be able to achieve for efficient logistic operations. The container depot and terminal are envisaged to come up over an area of 120 hectares (1.2 million square meters). The land area is around 15 per cent more than CONCOR’s Dadri ICD, located at Noida in Uttar Pradesh, roughly 300km from Jaipur, and with a size of 105 hectares. Furthermore, it is also to be noted that CONCOR has earmarked 113 hectares for development of the Khatuwas multimodal ICD in Rajasthan<sup>23</sup>. We project the throughput capacity of the facility at 5,00,00 TEU, just under 516,000 TEU for Dadri.

While there are no inland waterways around the location envisaged, the facility must ensure strong connections with rail, road and airport networks. As a result, land must be purchased in close proximity to a) The state capital of Jaipur and b) DMIC – for enabling the facility to be optimally productive. Farmland acquisition for the facility at market prices can take time, as can the sanction for container train operation licenses from Indian railways. Infrastructure development would also be in a staggered fashion, given the scale and scope of the project.

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<sup>23</sup> ESCAP (2015)

## Costs and Benefits

Our computation of costs and benefits for the projects are largely benchmarked to costs of building and operating the Dadri ICT of CONCOR as well as the revenues being earned by the facility. Dadri was built fifteen years ago. Development costs of the project have been accordingly scaled up, as have been the machinery and equipment costs – though, we do consider the possibility of development costs being partly offset by fiscal incentives awarded to an infrastructure facility like the one being conceived.

Land prices are based on current market prices of the location visualized –close to Jaipur and DMIC – and accommodated for escalation. Operating expenses, while benchmarked to those of Dadri's, are extrapolated upward. We expect the facility to have a better capacity utilisation than Dadri as we hope the efforts of the state of Rajasthan in improving doing business conditions to reflect in the performance of the terminal. With more than 60% capacity utilisation, we expect throughput to grow by 5 per cent each year as the facility picks up speed. More details are in Appendix.

## Establishment of a Free Trade Warehousing Zone (FTWZ)

### Background and evidence

Free Trade Warehousing Zones (FTWZs) are customised logistic facilities for enabling seamless movements of goods and services with the freedom to carry out trade transactions. These are usually located close to seaports and airports, as well as dry ports, and are easily accessible by rail. While being different from Special Economic Zones (SEZs) focusing on manufacturing, FTWZs – through their dedicated focus on trading and warehousing activities – are part of logistics infrastructure comprising trade facilitation activities aimed at reducing costs of doing business across borders. The zones are not only customised warehouses for specific industries, but also comprise a host of integrated facilities – such as, cargo storage and cooler facilities, good transport linkages with the domestic tariff area and advanced cargo tracking and information facilities - essential for facilitating trade and exports

FTWZs were noted as important elements of India's trade policy from the last decade. The medium term foreign trade policy of 2004-2009 of the Government of India encouraged their development in pursuit of the overall objective of creating world-class trade infrastructure.

Apart from being allowed to carry out transactions in free currency and being located close to airports and seaports, FTWZs were allowed to be set up as ‘processing’ parts of multi-product SEZs<sup>24</sup>. They were also stipulated to be of minimum area of 40 hectare (4,00,000 square meter), which was subsequently revised to 1,00,000 square meter. The latest Foreign Trade Policy (2015-2020) carries forward the emphasis by indicating these zones to be important parts of the country’s trade-enabling infrastructure and visualizes them working as international trading hubs<sup>25</sup>.

The academic evidence in favour of a facility like a FTWZ is obtained from the large body of literature supporting the importance of quality logistics in improving host country trade and exports. Logistics performance and trade are found to be positively correlated for large cross-section of countries including both developed and developing countries from different parts of the world<sup>26</sup>; trade facilitation measures including logistics are noted to make significantly positive impact on exports and enhance participation of countries and producers in global value chains<sup>27</sup>.

FTWZs are yet to become significantly noticeable in India. However, the number of such zones is increasing over time. Beginning from Arshiya FTWZ in Panvel Maharashtra, more and more FTWZs are coming up in India. The number of such zones would increase as more private investors enter logistics and warehousing services in India on the back of government emphasis and the efforts of both Central and state governments in bringing down logistics costs. Indeed, the role of a FTWZ can be critical for a land-locked state like Rajasthan, in terms of bringing down the costs of transportation, access to goods and services and enabling its producers to connect to global value chains.

## Description

Clearly a FTWZ requires to be a minimum size for being able to offer its users the benefits of integrated facilities. The present intervention visualizes a size of 125 acre, or roughly 50 hectare –midway between that of Arshiya FTWZ in Maharashtra and the upcoming Nanguneri at Tamil Nadu. It is, however, just not the size of the FTWZ that is important for

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<sup>24</sup> Palit and Bhattacharjee (2008)

<sup>25</sup> <http://dgftcom.nic.in/exim/2000/policy/chap-7A.htm>

<sup>26</sup> Gani (2017)

<sup>27</sup> Portugal-Perez and Wilson (2012)

accommodating quality logistics services. The location of the zone is equally important. It is important for the facility to be located in close proximity to the upcoming DMIC. The connectivity provided by the DMIC is perhaps the most important link connecting production hubs and clusters of Rajasthan to the rest of the country, including access to seaports. Indeed, the locational feature is an important determinant in raising the attractiveness of the project for potential investors from the private sector. This is an intervention that would take time to break even and should, therefore, be posited in the right geography for ensuring optimal returns.

## Costs and Benefits

Fixed costs for the intervention - land and development –are computed on the basis of market intelligence information. The approach used is identical to intervention 1 described earlier, in the sense of benchmarking estimated land prices at the market rates of farmland close to the DMIC, and escalated with built-in multiplier, for factoring higher costs. While land purchase costs are staggered over 3 years, development costs for the facility, computed on the basis of available warehouse development cost estimates<sup>28</sup> and staggered over four years, are estimated much higher at an aggregate of Rs 500 crore. Along with these high costs, operating expenses are also found to be high, as maintaining high quality of warehousing facilities, entails heavy expenses. We peg these at 60% of the development cost.

On the whole, the latter costs ensure that benefits, computed through revenues generated by the project from the 7<sup>th</sup> year, do not get to compensate costs till the 12<sup>th</sup> year. We estimate revenues on the basis of indicative warehousing charges for FTWZ<sup>29</sup> and assume a robust capacity utilisation rate of 70% based on continuing improvement in doing business conditions in Rajasthan and strong demand for the facilities. Annual revenues of Rs 275 crore are projected to increase by 5% each year. More details are in Appendix.

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<sup>28</sup> PWC (2011).

<sup>29</sup> “Proposed acquisition of operating warehouses at Arshiya FTWZ”, 23 November 2017, Ascendas India Trust.

# Scientific testing and certification facilities for organic food exports

## Background and evidence

Madhya Pradesh and Himachal Pradesh are India's leading states in organic food production followed by Rajasthan. The state has been receiving steady financial assistance under the Central government's National Horticulture Mission (NHM) for expanding organic farming. These efforts are being matched by the state government through complementary facilities like the ROCA, which is part of the Rajasthan State Seed and Organic Certification Agency, and has been accredited by the APEDA for certification.

With respect to the state's prospects for organic food exports, it is important to note two issues. The first of these are favourable agro-climatic conditions that encourage organic farming in several parts of the state as the former constrain use of fertilisers and pesticides. Indeed, industry bodies have pointed to the possibility of the state emerging as an organic export hub along with greater shift to organic farming as such a practice would bring down input costs and help producers in obtaining higher prices<sup>30</sup>. The other factor that contributes significantly to Rajasthan's prospects of increasing state income through exports of organic food is its leading position in oilseeds cultivation. Rajasthan is India's largest producer of rapeseed and mustard and is among the main producers of groundnut and soyabean<sup>31</sup>. Rajasthan's proficiency in production of oil seeds, coupled with the fact that oil seeds comprise half of India's organic food exports<sup>32</sup>, greatly enhances its possibility of emerging as an organic food export hub.

Rajasthan currently has the third largest area under organic certification after Madhya Pradesh and Himachal Pradesh. As the state moves forward on its goal of becoming a hub for certified organic exports, it is only natural that its producers must have access to adequate testing and certification facilities.

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<sup>30</sup> 'Rajasthan can become India's export hub for certified organic food: Report', The Hindu, 6 December 2012; <http://www.thehindu.com/todays-paper/tp-national/tp-newdelhi/rajasthan-can-become-indias-export-hub-for-certified-organic-food-report/article4169110.ece>

<sup>31</sup> Agricultural statistics at a glance, 2016, Ministry of Agriculture, Government of India.

<sup>32</sup> [http://apeda.gov.in/apedawebsite/organic/Organic\\_Products.htm](http://apeda.gov.in/apedawebsite/organic/Organic_Products.htm)

Empirical research on organic products from India point to inconsistency of quality and lack of adequate local certification agencies as important factors constraining organic exports<sup>33</sup>. This is hardly surprising given the rather large body of evidence on the relationship between quality standards and trade underpinning the importance of adoption of standards for leading to an increase in host country exports<sup>34</sup>. The evidence needs to be looked at in view of more specific results suggesting non-tariff measures (NTMs) - popularly described as SPS and TBT measures – often acting as market access barriers for developing country exports to developed country markets<sup>35</sup>.

On the whole, empirical evidence suggests the necessity of developing country exports – and in the present instance Indian organic food exports – complying with quality standards, both domestic and international standards. It is heartening to note that initiatives like the NPOP are emphasizing on certification and have been able to achieve equivalence with standards in US and EU, implying that exports certified by accredited agencies under NPOP would not face quality control issues in the European and American markets and would therefore not encounter market access barriers. Nonetheless, the significant role of more capacities in this regard can hardly be overstated, particularly for a state like Rajasthan that has great organic food export prospects.

Our expectation is the development of more capacities for certifying organic food exports would have the positive ‘substitution’ effect of encouraging a part of organic produce, currently aimed for the domestic market, to be diverted to exports. These exports would also fetch a premium over and above domestic price, which could even be as much as 50 per cent according to literature<sup>36</sup>. We expect the premium to generate considerable export revenue over time, more so organic exports from Rajasthan should include oil seeds that are among India’s largest organic exports.

## Description

The intervention is visualized as a laboratory with state-of-art testing and certification facilities. To be built over 5 acres, the emphasis of the laboratory will be on providing exports

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<sup>33</sup> Ummyiah et al (2017)

<sup>34</sup> Swann, G.P.(2010)

<sup>35</sup> WTO (2012)

<sup>36</sup> Garibay and Jyoti (2003)

headed outbound necessary certification for getting access in the US, EU and major markets in Asia, including Australia and New Zealand, as well as Africa. The facility will add to existing testing and certification facilities in the state, such as the ROCA, and will be organic product-specific given the great importance that these exports can play in Rajasthan's future economic growth. While the basic functional parameters, including the machinery and equipment to be installed, would proceed in line with norms set out by the FSSAI, we expect private sector and industry views to be important in shaping the final facilities of the laboratory. This is necessary given the industry's regular interaction with the process of obtaining standards and certifications. It is important for the facility to be located in close proximity to the state capital of Jaipur for enabling organic food producers easy access and post-certification transportation facilities.

## **Costs and Benefits**

Land and building costs for construction of the laboratory are estimated on the basis of market prices for industrial land close to Jaipur and the national highway network. Such locational characteristics are important for ensuring maximum accessibility to the laboratory from surrounding organic produce hubs. The land and building costs are assumed split over three years. In computing the laboratory and equipment costs, we go by the FSSAI's benchmark estimates for upgrading existing food testing laboratories in various Indian states. However, these estimates are extrapolated upward for factoring the costs of the most modern equipment required for testing products that need to meet highest global standards. Operating expenses are computed on the basis of a proportion of fixed costs, to be progressively scaled up over time.

Benefits are computed on the basis of current volumes and values of organic exports from India and shares of the state of Rajasthan extrapolated from therein. As explained earlier, we expect the positive substitution effect of the new facilities to result in a 15% increase in exports by volume in the first year. The price incentive for these exports – the differential between their current domestic market price and international price - is assumed 30% of current international price for organic exports. More details are in Appendix.

## Conclusion

The BCRs are summarized in Table 1.

Table 1: BCR Summary Table (INR Crore)

Interventions	Discount Rate	Cost	Benefit	BCR	Evidence
1. Development of an inland container depot and container terminal	3	3,924	6,274	1.6	Strong
	5	3,137	4,853	1.5	
	8	2,298	3,373	1.5	
2. Establishing a Free Trade Warehousing Zone (FTWZ)	3	3,791	3,558	0.9	Strong
	5	3,007	2,736	0.9	
	8	2,195	1,883	0.9	
3. Scientific testing and certification facilities for organic food product exports	3	54	86	1.6	Strong
	5	50	75	1.5	
	8	45	62	1.4	

Apart from intervention 2, which has BCRs of 0.9 under all discount rates, the remaining interventions produce high BCRs. By its very character, a free trade warehousing zone is a facility with high operational costs and would take considerable time to produce returns. Higher capacity utilization and more revenues might alter the BCR computations over some discount rates.

Quicker benefits are expected from intervention 3, which could be the 'low hanging fruit' for accelerating exports. Intervention 1, is also expected to be significantly benefit-enhancing over the longer term, notwithstanding high operational costs.

The larger point to be noted from the results is that policy benefits need to be distinguished between those would yield returns over a longer term vis-à-vis those in much nearer term. There are policies those, while being correct choices, would take time to fructify. Quicker implementation, needless to say, would lower costs and expedite benefits from all the interventions.

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## Appendix

### Assumptions for Costs and Benefits

Intervention 1: Development of an inland container depot and container terminal	
Costs	Benefits
<p>Land: We assume size of 120 hectares for the container depot and terminal. The price of farmland close to DMIC is Rs 265/sq yard<sup>37</sup>. We convert 120 hectares to square yard, which is roughly 1435188 square yard. We factor in cost escalation and assume acquisition price at Rs 300/square yard. The total cost is Rs 43 crore, which we round off at Rs 45 crore. The acquisition costs are equally spread out over 3 years.</p>	<p>Revenue: Our assumptions are based on the revenue performance of Dadri. Dadri has throughput capacity of 516,000 TEU with annual capacity utilisation rate of 56%. This has been generating an annual revenue of Rs370.78 crore (FY2014-15).</p> <p>Our assumptions – on the basis of roughly similar throughput capacity of 500,000 TEU - and 60-65% capacity utilization given the improvements in doing business conditions in Rajasthan, more demand and better equipment, indicate revenues of Rs 400 crore. Dadri has shown throughput growth of 13% per year. But we assume a much modest growth of 5%. One of the reasons for this modest assumption is Dadri now accounts for considerable container traffic from Rajasthan, which will only partly divert to the new terminal and initial incremental traffic growth might be slow.</p>
<p>Train License: We assume container train operator licenses would be required by the developer for running trains to various destinations from the point of origin. The cost of the license (Category A) required for such operations would be Rs 500 million (Rs 50 crore) as mandated by Indian Railways<sup>38</sup>.</p>	
<p>Infrastructure Development: The Dadri inland container terminal in UP was developed at Rs 163 crore in the year 2004. We expect development costs to have doubled during the years since and beginning from 2019. However we also factor in fiscal incentives that might be available in building infrastructure and peg the cost at less than double of Rs 163 crore and at Rs 300 crore. We, however, apply higher cost escalation of 150% for investment in handling equipment over and above the costs of Dadri (Rs 20 crore) and peg the cost at Rs 50 crore<sup>39</sup>. The costs are assumed spread over three years with first two years for infrastructure and then for handling equipment.</p>	
<p>Operating &amp; Maintenance costs: CONCOR at Dadri is incurring operating costs of US\$42.75million or 277.66 crore. We expect operating costs to be at Rs 300 crore or US\$50 million.</p>	

<sup>37</sup> Market intelligence property price websites such as <http://www.99acres.com>

<sup>38</sup> Ibid; Page 108

<sup>39</sup> Cost estimates, particularly escalation proportions, are also based on anecdotal evidence.

Intervention 2: Developing a Free Trade Warehousing Zone (FTWZ)	
Land: We assume a 125 acre FTWZ (roughly 50 hectare). This is based on sizes of comparable FTWZs that are coming up. India's first FTWZ developed at Panvel in Maharashtra by Arshiya was 165 acres. One of the latest FTWZs, the AMRP FTWZ at Nanguneri in Tamil Nadu is 100 acre <sup>40</sup> . We take an intermediate size of 125 acres between these two zones, which is roughly 600,000 square yard. We use the same price benchmark of Rs 300/square yard as for Intervention 1. The cost of land is therefore Rs 18 crore and assumed spread out over 3 years.	Revenue: Our assumptions are based on indicative warehousing charge of Rs 50-70/sq feet per month for FTWZs <sup>41</sup> . Our proposed FTWZ has an area of 5456250 sq feet (1 acre = 43650 square feet applied for 125 acre). We assume 70% utilisation of capacity based on continuing improvement in business conditions and good demand. Thus, utilisation of 3819375 sq feet per month - @Rs60 per square feet of assumed price – yields expected monthly revenue of Rs 229,162,500. This leads to an annual revenue of Rs 275 crore and we expect 5% increase in revenue each year.
Development: Capital cost of building a 0.15 million square feet (16666 sq yard) warehouse is estimated at Rs 150 million ie. 15 crore <sup>42</sup> (PWC Warehousing report). Using this benchmark, the capital cost for a 600,000 square yard FTWZ is estimated at Rs 540 crore including land. But we have already estimated land cost of Rs 18 crore. Net of the land cost, we keep the development cost at 500 crore. We also assume this to be staggered over 4 years.	
Operating Expenses: We assume operating expenses at 60 per cent of total capital costs, as we notice for intervention 1. This produces an approximate value of Rs 312 crore. We assume 2% increase each year.	
Intervention 3: Scientific testing and certification facilities for organic food exports	
Land and Building: We expect the laboratory to be located in the capital of Jaipur or in its close suburbs. We expect costs at Rs 25 crore and spread over 3 years.	Revenue: State-wise organic food export figures are not available. In 2015-16, total organic food produce from India was 263687 MT with a value of around US\$298 million <sup>43</sup> . Our assumption: Rajasthan has the third largest area under organic food cultivation in India and is the fourth largest in organic food production <sup>44</sup> . On
Laboratory and equipment: We follow the Food Safety and Standards Association of India (FSSAI)'s cost assessment for upgrading state food	

<sup>40</sup> 'Free Trade and Warehousing Zone takes off', The Hindu, 24 November 2017; <http://www.thehindu.com/news/national/tamil-nadu/free-trade-and-warehousing-zone-takes-off/article20746384.ece>

<sup>41</sup> "Proposed acquisition of operating warehouses at Arshiya FTWZ", 23 November 2017, Ascendas India Trust.

<sup>42</sup> 'Building Warehouse Competitiveness', PWC, July 2011.

<sup>43</sup> [http://apeda.gov.in/apedawebsite/organic/Organic\\_Products.htm](http://apeda.gov.in/apedawebsite/organic/Organic_Products.htm)

<sup>44</sup> EXIM Bank (2015)

<p>laboratories. These assessments point to total upgradation cost of Rs 8 crore for state food laboratories<sup>47</sup>. We upgrade the cost to Rs 10 crore. We expect the establishment of the lab along with equipment to take place in the 3<sup>rd</sup> year.</p>	<p>this basis, we expect 15% of current organic food exports to be taking place from Rajasthan. Our assumption is also based on the fact that oilseeds comprise 50% of current exports and Rajasthan is a leading producer of organic oil seeds<sup>45</sup>. This leads us to assume organic exports from Rajasthan at a volume of 39553 MT with a value of US\$44.7 million. Upon conversion, we obtain a value of Rs 290.55 crore for current organic food exports from Rajasthan. We expect the testing and certification facilities to lead to an annual increase of 15% in organic food exports given the robust projection of India's organic food exports projected at US\$1000 million in 2020<sup>46</sup>. We arrive at a volume of 5933 MT per year. These exports, which otherwise would have been consumed in the domestic market, are assumed to command a price premium of 30% in international prices. The assumptions indicate additional revenue of Rs 13.07 crore, which we further assume to increase by 5% each year.</p>
<p>Operating Expenses: We assume annual operating costs at 10% of total fixed costs (land and building, laboratory &amp; equipment) for first 3 years with further assumption of increase by Rs 0.5 crore each year. This leads to Rs 3.5 crore for first 3 years and increase of Rs 0.5 crore each year.</p>	

<sup>47</sup> SoFTel - Strengthening of Food Testing Laboratories; Food Safety and Standards Association of India (FSSAI).

<sup>45</sup> As in 19 above.

<sup>46</sup> 'Indian organics food market poised for growth', Pure&EcoIndia, 10 October 2015; <https://www.pureecoindia.in/indian-organic-food-market-poised-for-growth/>

# Sector Expert Review

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## Rajasthan Priorities

### An India Consensus Prioritization Project

**Pradeep S Mehta**

Pradeep S Mehta  
Secretary General  
CUTS International, and  
Secretary, CUTS Institute for Regulation & Competition

## Commentary<sup>1</sup>

On

### *“Enhancing Exports and Trade Rajasthan: Benefit – Cost Analysis”*

This study has highlighted the importance of trade expansion for India and underlined the requirement of necessary export oriented infrastructure in various Indian states for better competitiveness in the international market. It has underlined the need of providing necessary trade infrastructure to participate in global production networks. In India, most of the hinterland states are suffering from the problem of sub-optimal infrastructure for transporting goods to seaports. Rajasthan is also facing similar types of problems arising from sub-optimal infrastructure that is hindering the growth of its exports to the world. This report is timely as it clearly highlights the areas where government should focus to enhance trade in the coming future.

Focussing on India’s north-western state (Rajasthan), the report presents the results of benefit–cost analysis under three different but related policy interventions. The policy interventions are: Development of another inland container depot (ICD) and container terminal in Rajasthan; Development of Free Trade Warehousing Zone (FTWZ); and Setting up of scientific facilities for testing and certifying organic food exports in Jaipur. Under different scenarios of advanced trade infrastructure facilities, this report provides the expected benefits and costs under each policy intervention.

Being a part of Delhi-Mumbai Industrial Corridor (DMIC), Rajasthan has the opportunity to develop trade related infrastructure nearby to this corridor to achieve good growth in its exports. The report has also focussed on this aspect and suggested the provision of advanced trade infrastructure near to this corridor. In the first policy intervention, it has assumed the development of new ICD in Rajasthan with the facility of container terminal. It is also assumed that this facility would be beneficial for exporters by bringing down logistics cost and increase the global competitiveness of Rajasthan exports. This facility is envisaged near the state capital, Jaipur and in a close proximity to DMIC. While comparing the proposed ICD with existing Dadri

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<sup>1</sup> The present views are totally based on the report entitled “Enhancing Exports and Trade: Rajasthan Priorities” submitted under India Consensus Prioritization Project by Amitendu Palit (2018), Senior Research Fellow, Institute of South Asian Studies (ISAS), National University of Singapore.

ICD, the author is positive about the better performance of proposed ICD given the existing efforts of state government in promoting exports.

In the second intervention, the author has assumed the development of FTWZ<sup>2</sup> somewhere between Arshiya FTWZ in Maharashtra and the upcoming FTWZ at Nanguneri, Tamilnadu. The author has suggested that the location of this facility should be in close proximity to DMIC which would be the important link connecting production hubs and clusters of Rajasthan. This intervention is a long term policy intervention with high operational costs and takes time to produce returns.

In the third intervention, an emphasis is given on the usage of the potential of Rajasthan in exporting organic products. Rajasthan is India's largest producer of rapeseed and mustard and is among the main producers of groundnut and soya bean. Since oil seeds comprise half of India's organic food exports therefore, Rajasthan can take advantage of this by using its proficiency in production of oil seeds. As per the policy prescription, laboratory with testing and certification facilities should be established in Jaipur to facilitate the exports of organic products to US and EU. There exist such facilities but the assumption is the development of more facilities that enhance capacities for certifying organic food exports and indirectly promotes the exports of organic produce of Rajasthan. This policy intervention is a low hanging fruit and can be availed easily to promote exports of Rajasthan. As per the findings, the expected benefit from this facility is 15 percent increment in volume of exports in the first year.

The analysis of feasible policy interventions can be helpful to prepare strategies to achieve the Rajasthan's target of improving competitiveness of its exports and its share in total exports of India in the coming future. As mentioned earlier, these policy interventions are inter-related in the sense that all of the interventions are necessary in terms of necessary logistic services required for exporting business. The report has given a lucid explanation of the expected benefits and costs under each policy intervention and recommended swifter implementation of such policies for higher benefits and lower costs.

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<sup>2</sup> FTWZs are customised logistic facilities for enabling seamless movements of goods and services with the freedom to carry out trade transactions.

Rajasthan is the largest Indian state. It has a diversified economy, with mining, agriculture and tourism. Rajasthan has shown significant progress in improving governance and tackling corruption. However, it continues to face acute social and economic development challenges, and poverty remains widespread. What should local, state and national policymakers, donors, NGOs and businesses focus on first, to improve development and overcome the state's remaining issues? With limited resources and time, it is crucial that priorities are informed by what can be achieved by each rupee spent. To fulfil the state vision of "a healthy, educated, gender sensitive, prosperous and smiling Rajasthan with a well-developed economic infrastructure", Rajasthan needs to focus on the areas where the most can be achieved. It needs to leverage its core competencies to accelerate growth and ensure people achieve higher living standards. Rajasthan Priorities, as part of the larger India Consensus – a partnership between Tata Trusts and the Copenhagen Consensus Center, will work with stakeholders across the state to identify, analyze, and prioritize the best solutions to state challenges. It will commission some of the best economists in India, Rajasthan, and the world to calculate the social, environmental and economic costs and benefits of proposals.



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## C O P E N H A G E N C O N S E N S U S C E N T E R

Copenhagen Consensus Center is a think tank that investigates and publishes the best policies and investment opportunities based on social good (measured in dollars, but also incorporating e.g. welfare, health and environmental protection) for every dollar spent. The Copenhagen Consensus was conceived to address a fundamental, but overlooked topic in international development: In a world with limited budgets and attention spans, we need to find effective ways to do the most good for the most people. The Copenhagen Consensus works with 300+ of the world's top economists including 7 Nobel Laureates to prioritize solutions to the world's biggest problems, on the basis of data and cost-benefit analysis.