इंडिया एक्ज़िम बैंक
India Exim Bank

Exports from Uttar Pradesh:

Trends, Opportunities and Policy Perspective

EXPORT-IMPORT BANK OF INDIA

EXPORTS FROM UTTAR PRADESH: TRENDS, OPPORTUNITIES AND POLICY PERSPECTIVE

This study is an attempt to disseminate the findings of research studies carried out in the Bank. The results of research studies can interest exporters, policy makers, industrialists, export promotion agencies as well as researchers. However, views expressed do not necessarily reflect those of the Bank. While reasonable care has been taken to ensure authenticity of information and data, India Exim Bank accepts no responsibility for authenticity, accuracy or completeness of such items.

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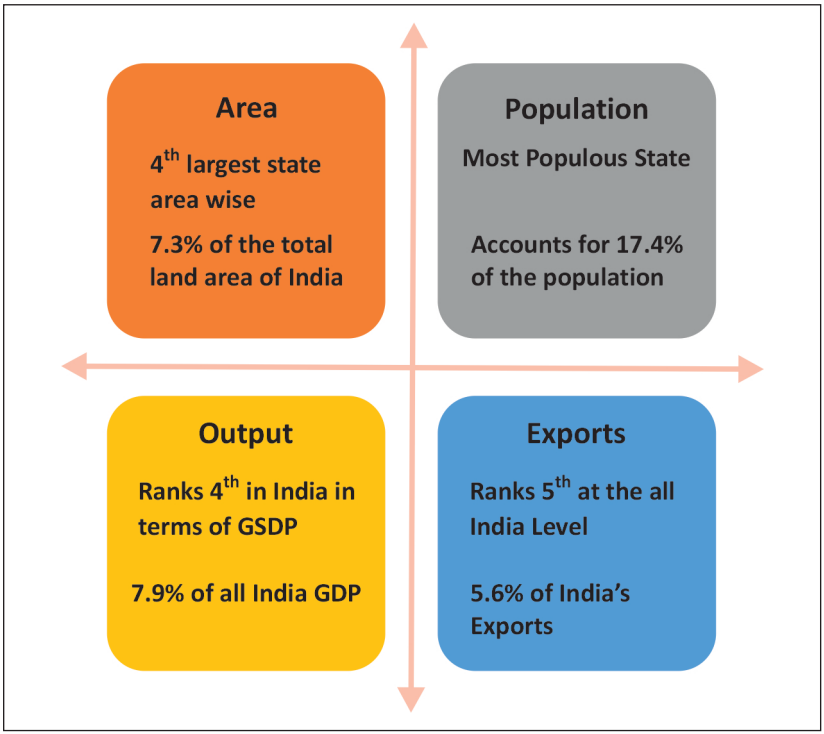
INTRODUCTION

Uttar Pradesh (UP) has been a confluence of cultures, religions, and businesses over several decades. It is the fourth largest State of India, spread over an area of roughly 95,000 square miles (246,000 sq km), equal to about 7.3 percent of the total land area of India. The State also ranks fourth in terms of output (Gross State Domestic Product[1]), accounting for 7.9 percent of the country's GDP in 2019-20. However, the State accounted for only 5.6 percent of India's merchandise exports during 2020-21, significantly lower as compared to the State's share in other key macroeconomic parameters. This underlines the need for UP to focus on promoting exports from the state.

[1] At constant price, base year 2011-12, MoSPI

Exhibit 1: Uttar Pradesh Key Metrics

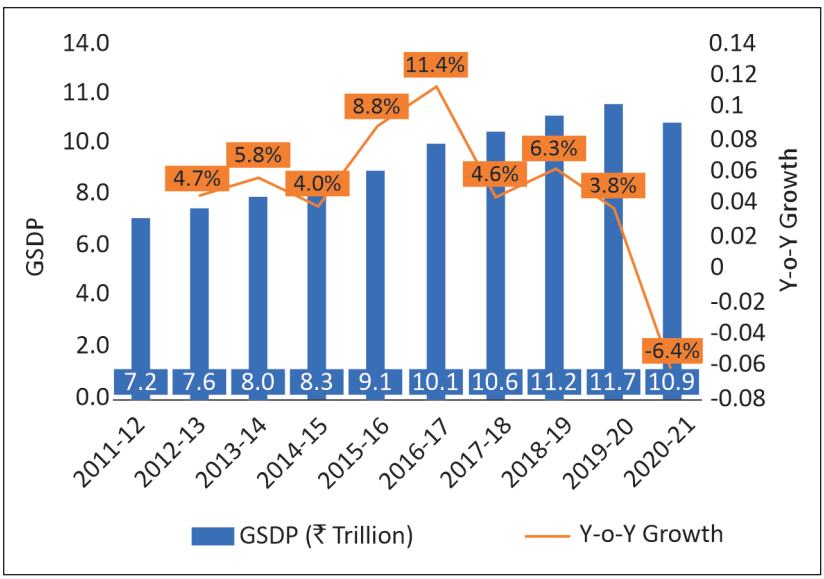


The State is landlocked and surrounded by Bihar in the East; Madhya Pradesh in the South; Rajasthan, Delhi, Himachal Pradesh and Haryana in the West; and Uttarakhand in the North. It also shares an international border with Nepal. The State also enjoys good connectivity in terms of roads, railways and air to other parts of the country. Both the Eastern Dedicated Freight Corridor and the Delhi Mumbai Industrial Corridor crisscross the State and meet near Dadri in Uttar Pradesh. Other upcoming logistical enhancements are also expected to accelerate industrial development in the State.

KEY ECONOMIC ACTIVITIES

Gross State Domestic Product (GSDP) is an important indicator to measure the growth and economic development in a State and gauge the changes in the economy. It measures the income generated by the production of goods and services within the geographical boundaries of a State. The GSDP of UP at constant (2011-12) prices registered consistent growth in the recent period, except in 2020-21, when the GSDP dipped by (-) 6.4 percent on account of Covid-19 related disruptions (Exhibit 2).

Exhibit 2: Trends in Gross State Domestic Product at Constant (2011-12) Prices of Uttar Pradesh

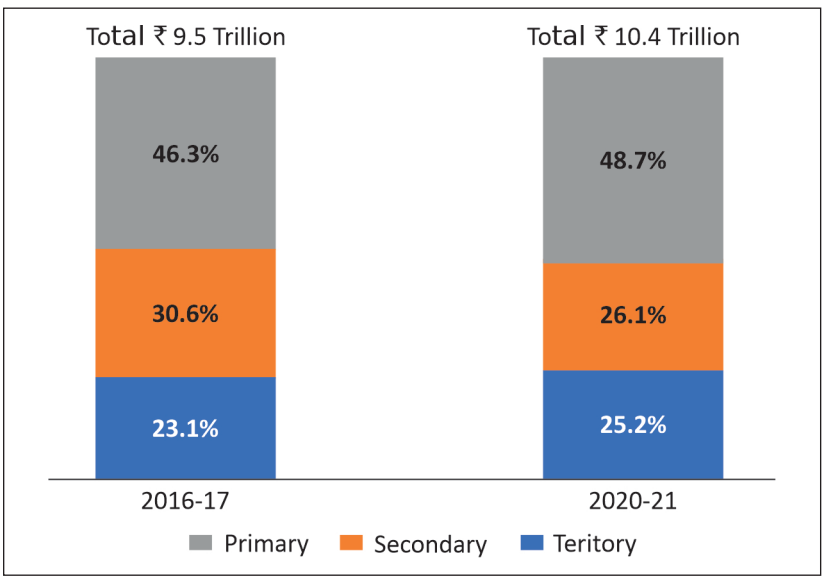


Source: MOSPI, Exim Bank Research

In 2020-21, the tertiary sector contributed 48.7 percent to Uttar Pradesh's Gross State Value Added (GSVA) at basic prices, followed by the secondary sector (26.1 percent) and the primary

sector (25.2 percent). A cause of concern has been the declining contribution of the secondary sector in the State's GSVA – from 30.6 percent in 2016-17 to 26.1 percent in 2020-21 (Exhibit 3). Within the secondary sector, the share of manufacturing has declined to about 14.2 percent of the GSVA in 2020-21 from 18.2 percent in 2016-17. This underscores the need for improvement in the productivity and competitiveness of the secondary sector, in particular the manufacturing sector of the State.

Exhibit 3: GSVA Composition by Sector



Source: MOSPI, Exim Bank Research

Primary Sector

Endowed with fertile land, a salubrious climate and perennial river system, UP has long been the granary of India. The State has the longest network of rivers and canals at 28,500 km, which fosters the agriculture sector.

Uttar Pradesh is the largest producer of food grains in India. Food grain production in the State stood at 55.0 million tonnes in 2019-20, accounting for about 18.5 percent of the country's total food grain output during the year. Major food grains produced in the State include rice, wheat, maize, millet (bajra), gram, pea and lentils. With overall vegetable production of 27.2 million tonnes in 2019-20[2], the State is also the second largest producer of vegetables in India.

UP is also recognised as a major milk-producing state. During 2018-19, the State's milk production was around 30.5 million tonnes, accounting for around 16.3 percent of the total milk produced in the country during the year. The National Dairy Plan has been introduced in eight districts of Uttar Pradesh namely Meerut, Ambedkarnagar, Lucknow, Bijnore, Gonda, Farrukhabad, Barabanki and Faizabad, which is driving growth in the dairy sector of the State.

Industrial Sector

UP is popularly known for its key traditional industries comprising handicrafts, leather goods, carpet, textiles, sugar, cotton yarn, jute, vegetable oil, glassware and bangles, etc. Easy access to raw material and huge potential of establishing new units in Eastern Uttar Pradesh have given a boost to sugar manufacturing in the State. As a result, UP is the second largest sugar producing state in the country.

UP also has a well-developed mineral-based industry. The State is endowed with mineral resources such as limestone, dolomite,

[2] National Horticulture Board, second advanced estimate 2019-20

glass-sand, marble, bauxite, non-plastic fireclay and uranium, which creates substantial opportunities for mineral-based industries in the State. Owing to the richness in the availability of raw materials like limestone and other minerals, the State is home to 15 large cement plants[3].

The large livestock population has also allowed the leather industry to flourish in the State. Kanpur and Agra have emerged as the hubs for leather goods in the country. The leather sector is set to gain further traction as the Government is setting up a mega leather cluster park in the State, which will attract investments of about Rs. 13,000 crore. UP is also the largest exporter of meat in the country, with 15 modern integrated abattoirs and 35 meat processing units in the State.

Textile industry is another promising sector for the State, with significant exports of carpets and readymade garments from the State. The State ranks fifth in the country in terms of handlooms and silk production. There are 2.58 lakh handloom and 5.5 lakh powerloom weavers in the state. The state also has 58 spinning mills and 74 textile mills in the non-small scale industrial sector. An apparel exports cluster is also being set up in Noida, which is expected to garner significant investments in this sector.

Infrastructure

UP is one of the largest power producers in the country. As of July 2021, UP had a total installed power generation capacity of 28,211 megawatt (MW)[4]. The State has good roadway infrastructure as

[3] DPIIT

[4] CEA

well as telecommunication networks. The State has a tele density of 68.03 per cent and had a share of 14.0 per cent in wireless subscribers in India[5]. Uttar Pradesh also has the biggest railway network in the country with a railway density of 40 km per 1,000 sq km, which is double the rail density of India. Agriculture, cement, fertilisers, coal and manufacturing are the major sectors being served by the railways. In terms of aviation infrastructure, UP has six domestic airports, located at Agra, Allahabad, Gorakhpur, Kanpur, Lucknow and Varanasi. An international airport is also coming up at Jewar, Greater Noida.

In terms of soft infrastructure as well, UP is way ahead of other states and UTs in the country. As per the Ease of Doing Business Rankings under the Business Reforms Action Plan (BRAP) of the Department for Promotion of Industry and Internal Trade, Uttar Pradesh ranked second among Indian states/UTs in 2019, up from 10th rank in 2015.

Services

Uttar Pradesh has also emerged as a key hub for IT & ITeS industries, including software, captive business process outsourcing (BPO) and electronics. It has also become a hub for the semiconductor industry with several major players having their offices and R&D centres in Noida.

Uttar Pradesh has also remained a favoured tourist destination in India due to the location of Taj Mahal in Agra, besides being home to the historical city of Varanasi. In 2019, Uttar Pradesh had the highest number of domestic tourist visits with a share of

[5] Telecom Subscription Data as on 31st May, 2021, TRAI

23.1 percent in the all-India total. Uttar Pradesh was also the third largest recipient of foreign tourist visits (FTV) in 2019, with a share of 15.1 percent in the overall FTVs to the country[6].

Uttar Pradesh is planning to introduce nine more circuits to boost tourism in the State[7]. The World Bank recently committed US$ 40 million (about Rs. 260 crore) for the development of tourism facilities in Uttar Pradesh under the UP Pro-Poor Tourism Development Project. The five-year programme is worth approximately US$ 57.14 million, of which US$ 40 million will be financed by the World Bank, and the remaining amount will be funded out of State Budget. The programme is aimed at increasing tourism-related benefits for local communities in targeted destinations.

EXPORT SCENARIO

The multitude of resource endowments, coupled with diverse production and value addition networks, provides UP with the opportunity to contribute significantly to the country's exports. During 2020-21, Uttar Pradesh ranked 5th among all States by value of exports. Merchandise exports from the State amounted to US$ 16.4 billion during 2020-21, up from US$ 12.4 billion in 2015-16 (Exhibit 4). The exports from the State recorded an annual average growth rate of 6.0 percent during FY16 to FY21, much above the all-India average of 2.4 percent for merchandise exports. Uttar Pradesh has been able to enhance its share in India's merchandise

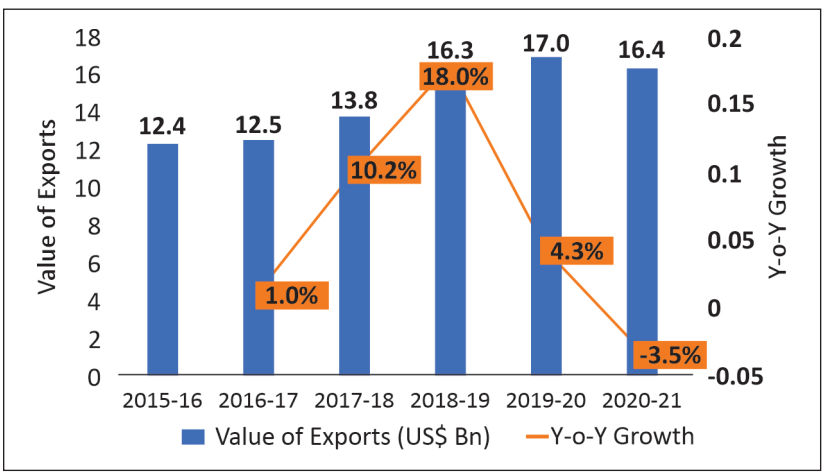
[6] India Tourism Statistics at a Glance 2020, Ministry of Tourism

[7] This includes the Mahabharata circuit, the Krishna circuit, Jain circuit, Sufi circuit, Freedom Struggle circuit, Kanwar circuit, Craft circuit, Cuisine circuit and Culture circuits.

exports from 4.7 percent in 2015-16 to 5.6 percent in 2020-21. The significant growth in exports from the State can be partly attributed to a conducive policy environment for manufacturing and exports.

During 2020-21, merchandise exports from Uttar Pradesh registered a y-o-y decline of 3.5 percent, after several consecutive years of positive growth. The decline was largely on account of the Covid-19 associated disruptions to international trade. The decline in merchandise exports from the State during the year was relatively muted as compared to the decline in merchandise exports from India as a whole.

Exhibit 4: Trends in Merchandise Exports from Uttar Pradesh

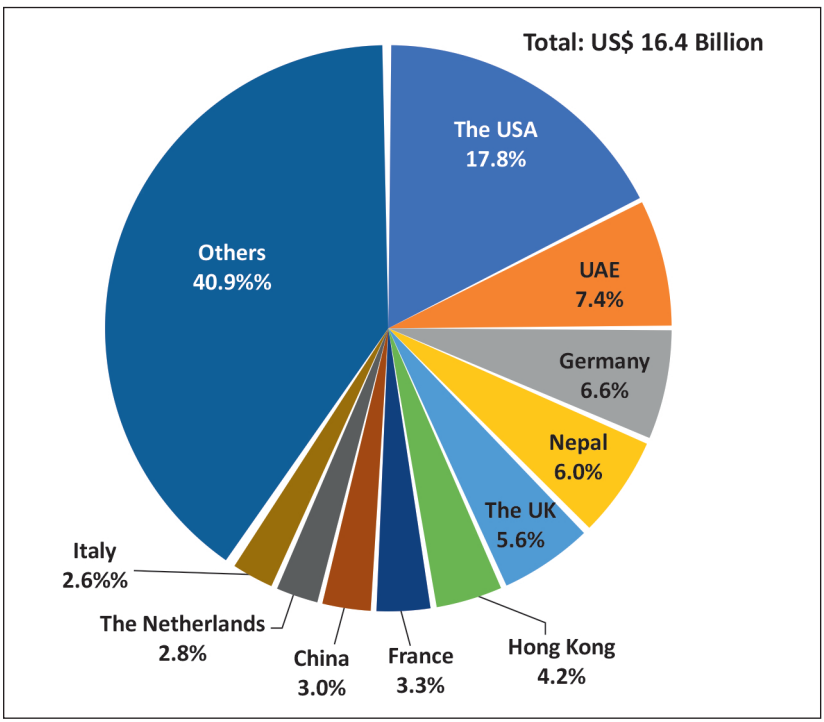


Source: DGCIS, Exim Bank Research

The USA is the largest export destination for UP, accounting for a share of nearly 17.8 percent in UP's merchandise exports in 2020-21, followed by UAE (share of 7.4 percent), Germany (6.6 percent), Nepal (6.0 percent), the UK (5.6 percent), and Hong Kong

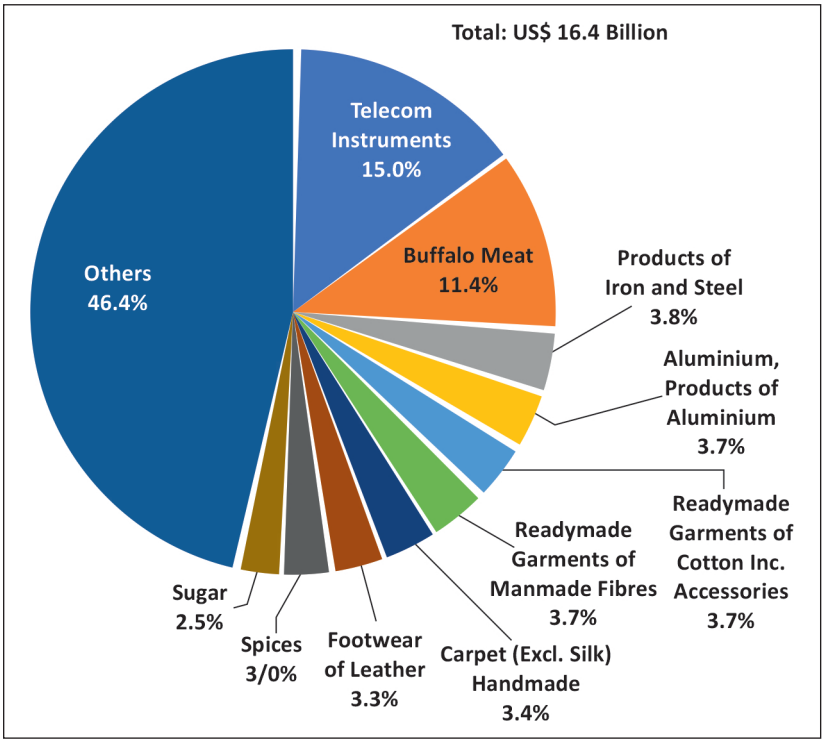
(4.2 percent) (Exhibit 5). Nearly 18.6 percent of the merchandise exports from the State were routed through Nhava Sheva. Other major ports for merchandise exports from the State were CGML Dadri (share of 16.9 percent), Delhi airport (9.2 percent), CFS Albatross/ICD Dadri (8.0 percent) and ICD Noida-Dadri (5.0 percent). Majority of the merchandise exports from the State is either routed through ports in Western UP or other states. There is need for creation of trade enabling infrastructure and greater capacity building in the eastern part of the State as well.

Exhibit 5: Top Destinations for Merchandise Exports from UP (2020-21)



Source: DGCIS, Exim Bank Research

Exhibit 6: Top Exported Products from UP (2020-21)



Source: DGCIS, Exim Bank Research

Some of the major products exported from the State include telecom instruments (share of 15.0 percent in UP's total merchandise exports in FY21), buffalo meat (11.4 percent), products of iron and steel (3.8 percent), aluminium, products of aluminium (3.7 percent), readymade garments of cotton incl. accessories (3.7 percent), and readymade garment of manmade fibres (3.7 percent), among others (Exhibit 6).

Uttar Pradesh is one of the largest exporting states across several categories of exports from the country. During 2020-21, UP accounted for nearly 90 percent of the exports of saddlery and

harness from the country. In several other categories, such as silk carpet, processed meat, buffalo meat, sheep/goat meat, telecom instruments and finished leather, UP accounted for more than half of the merchandise exports from India during 2020-21. Sports goods is also an important export item for UP, with the State accounting for nearly one-third of the overall exports of these products from India (Table 1).

Table 1: Products with Highest Share in India's Exports (2020-21)

Commodity	Value of Exports (US$ Mn)	Share in India's Exports
Saddlery and Harness	167.9	90%
Silk Carpet	18.3	78%
Processed Meat	1.1	65%
Buffalo Meat	1868.7	59%
Sheep/Goat Meat	24.9	56%
Telecom Instruments	2457.1	55%
Finished Leather	192.4	51%
Animal Casings	26.3	47%
Natural Silk Yarn, Fabrics, Madeup	24.0	43%
Other Non-Ferrous Metal and Products	228.2	40%
Carpet(Excl. Silk) Handmade	555.7	38%
Footwear Of Leather	545.0	37%
Sports Goods	87.0	32%
Leather Footwear Component	55.6	28%
Coal, Coke and Briquettes Etc	38.6	27%
Raw Hides and Skins	0.2	27%
Glass and Glassware	209.0	25%

Commodity	Value of Exports (US$ Mn)	Share in India's Exports
Plywood and Allied Products	274.0	24%
Wheat	125.4	23%
Readymade Garments of Manmade Fibres	598.8	23%

Source: DGCIS, Exim Bank Research

Untapped Export Potential & Key Focus Sectors

Estimates based on the data from ITC Export Potential Map indicates that UP has an untapped export potential of nearly US$ 12.2 billion in merchandise exports. Harnessing the untapped potential could raise UP's merchandise exports to nearly US$ 30 billion.

To realize the potential for exports, the export strategy should focus on those items which have the maximum potential for growth, taking into consideration both supply and demand side aspects. This would entail a granular analysis of the products where the state has comparative advantage and matching it with the global import demand for these products. An essential first step for this analysis would be quantification of the comparative advantage, which would help in identification of products where exports from the state have been performing well, as also those where success has been limited, although opportunities are significant.

For quantification of comparative advantage, the concept of Revealed Comparative Advantage (RCA) is used. RCA Indices are used to identify categories of exports in which an economy has a comparative advantage by way of comparison of the country's

trade scenario with the world trade scenario. The basic assumption underlying the concept of revealed comparative advantage is that trade profile reflects the inter-country differences in terms of relative costs as well as non-price aspects. As per Balassa's (1965) measure, RCA index for country i, commodity j can be defined as-

$$RCA_{ij} = \frac{(X_{ji}/X_i)}{(X_{wj}/X_w)}$$

Where,

X_{ji}: exports of commodity j from country i

X_i: total exports from country i

X_{wj}: total exports of commodity j from world

X_w: total exports from world

The RCA index ranges from 0 to infinity, with 1 as the break-even point. That is, an RCA value of less than 1 means that the product has no export comparative advantage, while a value above 1 indicates that the product has a comparative advantage.

The normalized revealed comparative advantage (NRCA) index has been demonstrated capable of revealing the extent of comparative advantage more precisely and consistently than other alternative RCA indices in the literature. NRCA can be defined in the following manner-

$$NRCA_{ij} = \frac{RCA_{ij} - 1}{RCA_{ij} + 1}$$

A positive NRCA value indicates that UP has a comparative advantage in exports of that product, while a negative NRCA value indicates the lack of comparative advantage of UP in exports of that product. Only those products have been considered which have substantial global imports as well as export from UP.

The export competitiveness of Uttar Pradesh, as reflected in the NRCA, has been mapped with global demand for the products during the period from 2015 to 2019. Based on this mapping, four categories of products have been identified:

- **Product Champions – Competitive Exports (NRCA > 0); Growing Import Demand (Product Import AAGR > 0):** These products have the maximum potential, as the world demand for these products during 2015 to 2019 has shown robust growth, and UP's exports of these products are competitive. These could be targeted for achieving export growth in the short to medium term. These could be termed as Product Champions.
- **Underachievers –Exports not competitive (NRCA < 0); Growing Import Demand (Product Import AAGR > 0):** UP does not have comparative advantage in these products, but the import demand for these products has shown positive growth over the period under consideration. The state can strive towards increasing competitiveness in these products, in the medium to long term.
- **Declining Sectors – Exports not competitive (NRCA < 0); Weak Import Demand (Product Import AAGR < 0):** UP does not have comparative advantage in these products, and the sector has also registered negative global import growth during the period under consideration. There is need for diversification away from these areas.
- **Achievers in Adversity – Competitive Exports (NRCA > 0); Weak Import Demand (Product Import AAGR < 0):** UP has competitiveness in these products, but the world import demand for these products has been negative. There is also a need to diversify away from these sectors.

Analysis indicates that there are nearly 103 products at the HS-6 digit level that can be termed as product champions. This includes products like electronics (particularly mobile phones); meat products; articles of precious metals; articles of iron & steel, aluminium, copper; cereals like rice; menthol; garments; footwear; leather products; automotive like motor cycle and tractor, as well as select auto-components. Exports of these 103 products accounted for nearly 65.2 percent of UP's total exports in 2019 (Exhibit 7). As these products are low hanging fruits, they have the maximum potential for enhancing exports from UP. Sector-wise classification of these products indicate that textile and allied products accounts for the largest number of product champions (25 HS codes at 6-digit level), while in terms of value, machinery and electronics is the most important product champion sector for the State (Table 2).

Exhibit 7: Product Identification for Exports from UP (2019)

Product Champions (103 products) UP's Export = US$ 11.2 Billion 65.2% share in UP's Exports World Imports = US$ 1,437.0 Billion	**Achievers in Adversity (29 Products)** UP's Export = US$ 1.9 Billion 11.3% share in UP's Exports World Imports = US$ 97.8 Billion
Total Products: 148	
Under Achievers (15 products) UP's Export = US$ 0.6 Billion 3.7% share in UP's Exports World Imports = US$ 1,997.6 Billion	**Declining Sectors (1 product)** UP's Export = US$ 57.0 Million 0.3% share in UP's Exports World Imports = US$ 129.9 Billion

Source: DGCIS, ITC TradeMap, Exim Bank Research

Table 2: Sector-wise Distribution of Product Champions for UP

Categories	UP's Exports in 2019 (Value in US$ Mn)	Number of HS Codes at 6-Digit
Machinery and Electronics	2659.5	8
Live Animals; Animal Products	1996.7	4
Textile and Allied Sectors	1580.4	25
Metal and Articles of Metal	1364.1	16
Chemical and Allied Products	657.8	8
Transport Equipment	461.0	5
Gems and Jewellery	376.8	1
Agricultural Products	359.6	3
Leather and related products	315.4	6
Miscellaneous	312.3	7
Footwear, gaiters and the like	261.7	3
Articles of Stone, Plaster, Cement etc.; Glass and Glassware	243.7	2
Prepared Foodstuffs, Beverages, Tobacco, etc.	170.3	4
Wood and Articles of Wood	137.9	3
Plastics and Articles Thereof	132.6	3
Paper and Related Articles	89.5	2
Mineral Products	44.7	2
Optical, Photographic, Cinematographic, measuring, checking, precision, medical instruments etc,	26.2	1
Grand Total	**11190.1**	**103**

Source: DGCIS, ITC TradeMap, Exim Bank Research

In the medium to long term, the state needs to encourage development of capacities in underachiever segments, where the State currently does not have comparative advantage, but the world import demand has been robust in the recent years. Although exporters from UP have presence in these areas, which includes petroleum products, pharmaceuticals, electronics components, parts of machinery, articles of plastic, etc. (Table 3), there is a need to strive towards increasing competitiveness in these products.

Table 3: Underachiever Categories for UP

HS Code	HS Description	Exports from UP in 2019 (US$ Mn)
271019	Medium oils and preparations, of petroleum or bituminous minerals	219.6
854239	Electronic integrated circuits (excluding such as processors, controllers, memories and amplifiers)	69.3
300490	Medicaments consisting of mixed or unmixed products for therapeutic or prophylactic purposes	62.4
271012	Light oils and preparations, of petroleum or bituminous minerals	48.6
852990	Parts suitable for use solely or principally with transmission and reception apparatus	28.7
854231	Electronic integrated circuits as processors and controllers	27.2

HS Code	HS Description	Exports from UP in 2019 (US$ Mn)
840991	Parts suitable for use solely or principally with spark-ignition internal combustion piston	25.8
853890	Parts suitable for use solely or principally with electrical apparatus	20.8
611020	Jerseys, pullovers, cardigans, waistcoats and similar articles, of cotton, knitted or crocheted	20.7
853710	Boards, cabinets and similar combinations of apparatus for electric control or distribution	20.6
392690	Articles of plastics nes	20.2
848180	Appliances for pipes, boiler shells, tanks, vats or the like	20.1
271111	Natural gas, liquefied	19.0
901839	Needles, catheters, cannulae and the like, used in medical, surgical, dental or veterinary	18.5
640299	Footwear with outer soles and uppers of rubber or plastics	17.4
Total		**638.9**

Source: DGCIS, ITC TradeMap, Exim Bank Research

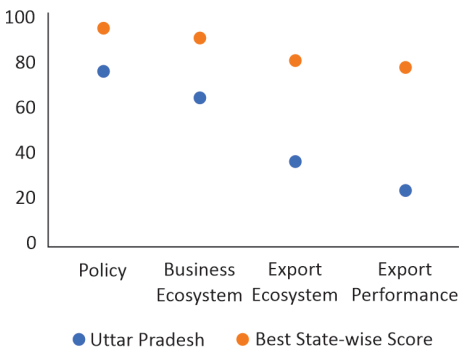
COMPARATIVE ASSESSMENT OF THE EXPORT PREPAREDNESS OF UP

The Export Preparedness Index of the Niti Aayog benchmarks the performance of states/UTs against their peers and analyses

the potential challenges and prospects to develop better policy mechanisms for exports at the state level. In the Index, Uttar Pradesh has been categorized as a Landlocked state/UT. Within this category, Uttar Pradesh lags behind the states like Rajasthan, Telangana, Haryana, and Chhattisgarh. The State also lags behind the best-performing state on several pillars of the EPI, such as export system and export performance. In terms of export policy, however, the state is relatively closer to the best-performing state on the pillar (Exhibit 8).

Exhibit 8: Comparison of UP on the EPI with Landlocked States and the Best Performing States

Landlocked State	EPI Score
Rajasthan	62.59
Telangana	57.43
Haryana	56.03
Chhattisgarh	55.95
Uttar Pradesh	**53.63**
Madhya Pradesh	49.47
Jharkhand	48
Punjab	39.63
Assam	22.81
Bihar	21.55
J&K	12.27



Source: EPI 2020, NITI Aayog

SELECT STRATEGIES FOR AUGMENTING EXPORTS FROM UP

In order to take a holistic view, strategy for promotion of exports from UP should entail strategizing across various levels with focus

on alleviating the specific challenges faced by the exporters in the state, as also improving the preparedness of the state in tapping new export opportunities.

Market and Product Diversification

The State needs to diversify its export basket towards higher value added items. One of the efficient ways to expand the exports basket is to look at product diversification based on value addition. There are two methods for export diversification- horizontal and vertical diversification. While horizontal diversification takes place in the same sector by adding new products to the existing export basket within the same sector, vertical diversification entails a shift from primary to secondary to tertiary sector. Vertical diversification would entail contriving further uses for existing products by means of increased value- added services, processing, marketing or other services.

In the agricultural and allied sector, for example, there should be a greater focus towards vertical diversification into more processing activities. A case in point is the livestock related sector of the State. Livestock related products are major export items for the state, but the state's exports of processed livestock products is currently limited. Currently, meat is an important item of exports from the State, but exports of processed meat is limited. Diversification of exports towards high value-added meat products can fetch better margins in the international market.

Exporting processed spices, in the form of spice oleoresins is another emerging opportunity for the state. Oleoresins have high potency of active components that enable their usage in small dosages, while also leading to standardization in taste and consistency in flavor. These oleoresins find application in

industries such as beverages, confectionery, meat canning, sauces, pharmaceuticals, seasonings etc. For instance, chilli oleoresins are increasingly being used in pharmaceutical applications due to their analgesic, antioxidant, anti-cancer and anti-inflammation properties, while black pepper oleoresins are also witnessing growing demand due to their antioxidant and antimicrobial characteristics. Similarly, turmeric oleoresins are gaining popularity in the skin care industry. The USA and the European countries such as the UK, Germany, Belgium, Spain and Austria are among the top importers of spice oleoresins in the world[8].

Within manufacturing, the textile sector presents significant opportunities for exports. Although the state government has already taken steps towards modernizing the textile and allied industries and attracting investments in the sector through mega clusters, there is a need to diversify the textile value chain towards segments such as home textiles and technical textiles.

The recent Covid-19 crisis has opened opportunities for Indian pharmaceutical sector to the tune of US$ 7.3 billion. UP could use this opportunity to fulfil the global demand for bulk drugs and formulations. In this context, the State could encourage production of bulk drugs and formulations by leveraging incentives provided by the Central Government such as the 'Production linked Incentive Scheme'. The scheme encourages production of 53 critical drug formulations by providing financial incentives to eligible manufacturers on their incremental sales for a period of 6 years (FY20-26). Bulk drugs should especially be a focus sector for the state as these are key inputs, and the import dependence on China for these products has increased in the recent period.

[8] ISI Emerging Markers- Grand View Research

Disruptions to supply chains could have an untoward consequence on the pharmaceutical companies, as noted during the Covid-19 pandemic. Therefore, the state should encourage setting up more bulk drugs unit, and could also set up bulk drug parks in the State in collaboration with the central government.

Electronics and machinery sectors are among the emerging high-tech sectors in UP. The State needs to focus on enhancing production and export capacities in these high-technology intensive sectors, as these are less volatile compared to agricultural products and resource-intensive manufactures which are prone to fluctuating commodity prices. These sectors would also create high-skill employment in the state. The Central Government, under the Atmanirbhar Bharat Abhiyaan, has announced several schemes to promote production in sectors such as electronics. This includes Production Linked Incentive Scheme, and the Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors. These schemes could be leveraged and highlighted to prospective investors by the State for attracting investments in these sectors.

The state could also encourage production and exports of lithium ion, static converters, optical fibre cables, electric conductors, and medical appliances and instruments. These are the products with large and growing global imports. For production and exports in some of these high-technology sectors, the state needs to incentivize export-oriented foreign investments, as domestic capabilities are limited. Greater impetus could be given to these sectors under the 'Make in UP' Program.

The Covid-19 pandemic has shaken the foundations of the traditional form of outsourcing across all industry segments,

and companies are increasingly opting for re-shoring and regionalization. Reshoring would lead to greater focus on localization of value-added activities at all stages of the value chain within the country/region. The regionalization trend would lead to greater investments in regional market-seeking investments, in an effort to build more robust and agile supply chains. The traditional model is expected to be replaced by one where regionalized logistics hubs close to the point of demand are prevalent, enabling manufacturers to source from local component and sub-system suppliers and product integrators. As the state of UP provides a large market, more foreign companies are expected to invest in building production and distribution value chains in the State to effectively tap the growing market. These production bases would also cater to the demand in other countries, thereby increasing exports from the State. In light of these developments, the 'Make in UP' program could be further transformed to encompass the strategy of 'Assemble in UP'. This will be in line with the perspective highlighted in the Economic Survey of India, 2019-20 of amalgamating 'Assembling in India for the world' into the 'Make in India' initiative of the Government of India . According to the Economic Survey, integrating 'Assemble in India for the world' into the 'Make in India' initiative, can help India raise its share in exports of network products in the world to about 3.5 percent by 2025 and 6 percent by 2030.

There is also a need for diversification of markets for UP's exports. Analysis of UP's exports of the product champion commodities indicates that these exports are concentrated in a few geographies (Annexure 1). Further, the top destinations for several products exported by the manufacturers in UP are not the major import markets for these products. For instance, in the case of frozen,

boneless meat of buffalo (HS 020230), Malaysia, Vietnam and Indonesia feature among the top destinations for exports of these products from UP, but these do not feature among the top 5 global importers of the product. Meanwhile in the case of semi-milled or wholly milled rice, whether or not polished or glazed (HS 100630), the USA does not feature among the top 5 destinations for exports from UP, although it is one of the largest importers of the product.

There is also significant market concentration in exports of some products. For example, more than one-third of the exports of articles of jewellery and parts thereof, of precious metal other than silver (HS 711319) from UP are exported to the USA, although the share of the USA in world imports is relatively lower at 11.8 percent. Switzerland, the second largest import market for these products, does not feature among the top 5 destinations for exports of these products from UP. Clearly, there is need for targeting the top importing markets for the products and diversifying the exports basket.

Promotion of Defence Exports

Over the recent years, the Government of India (GOI) has taken several steps to promote investments and capacity additions in the domestic defence industry, with a focus on improving the landscape for private sector participation. The support to the sector has been further bolstered under the Atmanirbhar Bharat programme, with a wide array of measures taken by the GOI to improve the investment climate for defence production in India, modernize the armed forces, and reduce external dependence for defence procurement. With these measures, the GOI expects the turnover of defence production industry in India to reach ₹ 1,75,000 crore (US$ 25 billion) by 2025, and exports to reach a

level of ₹ 35,000 crore (US$ 5 billion).

The UP Government has also taken steps to promote defence manufacturing and exports. The State cabinet has approved a UP Defence and Aerospace Units and Employment Promotion Policy 2018, with an intention to generate investment of ₹ 50,000 crore (US$ 7.46 billion) and create 0.25 million jobs over a five-year period. In February 2020, the State also organized the Defence Expo-2020 and received proposals worth ₹ 5 lakh crore (US$ 70.93 billion) for investment. A defence industrial corridor has also been set up in the State with the cities of Jhansi, Agra, Kanpur, Lucknow, Chitrakoot, and Aligarh being the nodes of the corridor. The Defence Industrial Corridors is expected to catalyze indigenous production of defence and aerospace related items, thereby reducing the reliance on imports and promoting export of these items to other countries.

Financing and facilitation of defence exports, unlike other manufactured goods, often involves medium to long term time horizons. The institutional structure of Export Credit Agencies (ECAs) enables them to facilitate and finance such medium to long term export credit requirements. Several ECAs have dedicated programs, often separate from their commercial account, for supporting the development of domestic defence industry. Like other ECAs, India Exim Bank has also been supporting exports of defence related products and equipment, including vessels and vehicles, and defence related service from India, under its various flagship financing programmes viz. the Lines of Credit facility and Buyers' Credit under NEIA. There is a need to create awareness about the opportunities in overseas markets and the medium to long term financing options from Exim Bank. The State Government in collaboration with the Bank can organize awareness programs for defence exporters in the Defence Industrial Corridor about the

export opportunities and financing options. The State Government could also consider setting up a Defence Development Fund for providing credit-linked capital subsidy to firms in the defence goods sector. This can further improve the investment climate for defence goods in the State and ensure success of the Defence Industrial Corridors project. It may be noted that such an approach has also been adopted by countries like China and Brazil.

Promoting Development of Capital Goods

The capital goods sector is one of the drivers of industrial growth. Segments such as industrial machinery for dairy, machine tools, AC & refrigeration machinery, electric machinery & equipment, amongst others would be critical for further development of the manufacturing sector in the State.

There is a need to encourage Start-ups to engage in emerging technologies such as 3D printing, robotics, automation, digitalisation, etc. For this purpose, the government could consider setting up of multiple incubation centres across the State, in Public Private Partnership (PPP) mode to support promising Start-ups engaged in production and/ or development of high-tech capital goods. A cost sharing mechanism could be developed to share the cost of setting up the incubation centres between the state government and the industry. Support could also be provided to Start-ups during the pre-incubation and post-incubation phases. For example, the State Government could introduce an Innovation Challenge Fund for promoting innovation in specific high-tech areas. The fund could target Start-up innovators and manufacturers who already have incubated technologies that are not yet commercialized. This could encourage creation of an innovation ecosystem in the sector.

Given the critical role of high-tech capital goods in boosting the industrial production, the concept of Innovation Vouchers can also be introduced by the State Government for manufacturers in this sector. Innovation vouchers refer to funds provided by governments in the form of concessional credit lines or grants, to support R&D projects of private businesses, collaborative R&D projects between companies and research institutes, and promote commercialisation, thereby supporting the overall innovation ecosystem. Several countries such as the UK, Germany and Australia have introduced this scheme wherein MSMEs can avail funding to access professional skills, services or knowledge to commercialise an innovative idea. Applications under the scheme are evaluated on criteria such as the need for the idea/ innovation, level of impact and tangible benefits from the innovation, capability and capacity of the applicant, financial viability, the competitive advantage accruing from the innovation and the need for specialist service providers to advance the idea. The target actors of the scheme are public and private research institutions, higher education institutions, SMEs, researchers and funding organizations, and its purpose is to establish linkages—advice and consultancy and R&D collaboration—among these actors. The voucher is meant to act as an incentive for SMEs to approach knowledge providers seeking innovation-related solutions. While the financing is typically provided to the applicants for engagement of service providers to advance the innovation/ idea, some countries also provide funding to eligible applicants with proven capability and capacity to undertake an eligible project internally. Successful applicants under the program must be able to provide a net cash co-investment of 20:80 (ratio of applicant to government funding).

The hi-technology zones like Chengdu in China and Colorado in the USA, both land-locked like Uttar Pradesh and yet successful,

could also be possible models for replication in the State. Suitable districts could be identified in the State for setting up such high-technology zones for manufacturing of capital goods. Single-window clearances, robust infrastructure facilities and fiscal incentives could be considered attracting investment in the zones.

Developing Tourism Sector

The environment, society, and aesthetics of many tourist destinations are rendered vulnerable by their own popularity. This could be in the form of environmental degradation, threat to cultural heritage, overuse of infrastructure or deterioration in tourist experience. This is especially a challenge in cities such as Agra which witness significant visitor traffic. The state needs to adopt strategies which promote sustainable tourism, especially with regard to overcrowding, in light of the new normal of social distancing. An essential starting point would be establishment of data systems which can be leveraged for providing live statistics on carrying capacity of destinations, parking and hotel availability, among others. Tourism authorities could also use a daily cap for limiting the number of tourists, or use reservation systems.

The tourism sector in the State also suffers due to inadequate support infrastructure at tourist destinations, inadequate cleanliness at tourist destinations including lack of clean public toilets, limited availability of certified tourist guides, limited availability of hygienic and quality eateries at tourist destinations, inadequate visitor management systems at sites, especially at religious destinations leading to lapses in conservation of Heritage Sites and harassment of tourists from touts and miscreants. To alleviate these challenges, a Heritage Development Fund can be set up for the maintenance and development of important

heritage monuments and underdeveloped tourist destinations in the State.

Skill Development

Exporters need to have in-depth knowledge of the latest global developments pertaining to international trade viz., export finance, insurance, packaging / ecolabelling, quality, etc. They also need to acquaint themselves with the rules and procedures of importing countries. Hence, there is a need to conduct Workshops / Seminars / Conferences regularly on different aspects of international trade and across different sectors in the State. A comprehensive inter-ministerial network can be built with institutions such as Export Promotion Councils, and India Trade Promotion Organization which would provide a holistic environment for technological upgradation and skill development

State Universities can also be encouraged to commence both vocational and research-based courses to meet the skill gaps prevailing in various sectors, to encourage value added exports from the state.

Hidden Champions Initiative

The State Government can also initiate a 'Hidden Champions' initiative, to identify, encourage and felicitate promising small enterprises that have shown exemplary performance in exporting products through innovative practices. This can encourage innovation in the State economy. Under the Hidden Champions initiative, select companies could receive both financial and nonfinancial forms of assistance to incubate globally competitive SMEs.

Modifying the State Export Award

The State Export Award is given by the Government of Uttar Pradesh to outstanding exporters of the State across 25 sectors. In order to streamline the process, a consolidation of these 25 sectors into 10 broad sectors may be considered. Within these sectors, awards can be provided under different categories such as innovative product, new market, quality product, quality manufacturing process etc. depending on the idiosyncrasy of respective sectors. This will encourage entrepreneurs to adopt best practices. Such segregation could also be done based on parameters like turnover (MSMEs, large units, grassroots business,) young promising companies, and women entrepreneurs.

Brand Building

Connecting MSMEs directly to their markets and customers can be beneficial. The Uttar Pradesh Government has taken a step in this direction with the launch of a dedicated portal for MSMEs by the name of 'Sathi'. For effective utilization of the e-commerce channel by MSMEs, an effective marketing and brand building strategy would be essential.

Strengthening Trade Enabling Infrastructure

The State can enhance its export competitiveness by plugging the existing gaps in trade enabling infrastructure. According to the Export Preparedness Index of the Niti Aayog, UP underperforms in all categories of transport connectivity parameter (Exhibit 9). It has one of the lowest scores among all States/UTs on the parameter (Exhibit 10). Clearly, there is significant scope for the state to improve on this key parameter by setting up more ICDs, air cargo facilities, and improving the connectivity to the ports.

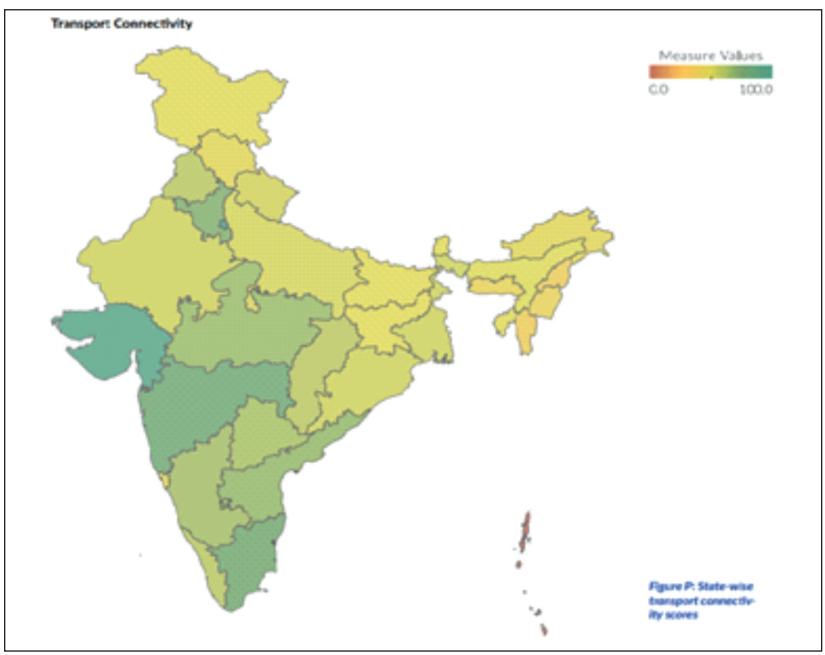
Exhibit 9: Score of Uttar Pradesh on the Transport Connectivity Parameter of EPI

Transport Connectivity	51.91
Air Cargo Facilities	0.23
LEADS Index	85.08
Number of ICDs	0
Number of MMLH Hubs	0

Note: All Scores are on scale of 0 -100. Red indicates underperformance on the parameter

Source: Export Preparedness Index 2020, NITI Aayog

Exhibit 10: State-wise Transport Connectivity Scores



Note: Benchmarking was done for undivided state of J&K

Source: Export Preparedness Index 2020, NITI Aayog

Uttar Pradesh needs to enhance the utilization of the support provided under the central government's Trade Infrastructure for Export Scheme (TIES) for developing and strengthening essential export infrastructure. As per the latest available data, only 1 project has been approved under the TIES for developing export infrastructure in the State.

There is also a need to strengthen warehousing and cold storage facility in the State. Although Uttar Pradesh is the largest milk producing state in India, the availability of cold chain infrastructure for dairy is scarce. Uttar Pradesh has only 2 percent of the Bulk Milk Chillers, 8.6 percent of the chilling centres and 5.1 percent of the dairy plants in the country. There is a need to improve the cold chain infrastructure in the dairy sector of Uttar Pradesh. The Government of India's PM Kisan SAMPADA Yojana can be leveraged to strengthen the cold chain infrastructure.

SPS/TBT Infrastructure

In addition to trade related infrastructure, SPS/TBT infrastructure also plays a crucial role in promoting exports. To compete in highly regulated advanced economies, exports need to adhere to various quality requirements. In this context, existence of adequate research institutes and NABL accredited laboratories play a vital role in enhancing the quality of products in line with international standards[9].

Despite being among the top 5 exporting states in the country, UP's performance in terms of availability of NABL accredited research labs is relatively low when compared to competing states like Maharashtra, which has 895 accredited labs, while Uttar

[9] Export Preparedness Index, NITI Aayog

Pradesh has only 83 labs at an internationally acceptable level of competence. There is a need to set up more SPS/TBT infrastructure in the State.

Promoting Solar Cells / Modules Manufacturing in the State

Since the beginning of this century, India has progressed immensely in the renewable energy sector, especially in the solar power segment. However, India lacks strength in manufacturing of solar cells, and as a result, suffers from a huge deficit in the trade of photovoltaic cells. In the process India has become dependent on China for imports.

Uttar Pradesh has also set ambitious targets for solar energy. The State has capacity to produce 30.27 GW of renewable energy, and has set an objective of annual addition for production capacity of solar energy at 2,000 MW. This would lead to substantial imports of solar cells for projects in the State. In order to reduce import dependence, mandatory uptake of domestically manufactured solar devices in the State Government offices can be considered for promoting domestic manufacturing. Strengthening domestic capacities through such public procurement opportunities can reduce trade deficit and also help build export competitiveness.

Strengthening Clusters

In the sub-pillar of cluster strength in the EPI, Uttar Pradesh is the top-performer. Its score in terms of cluster strength stands at 123, while the country average stands at 40. This provides the state with an opportunity to promote these clusters and accelerate its exports.

The State needs to develop a mechanism for assessing the performance of its existing clusters, in order to review the current status as well as identify sectors/ subsectors for developing newer clusters. Such an assessment must cover aspects pertaining to prevailing infrastructure bottlenecks, as well as challenges in technological upgradation, access to skilled human resources, environmental sustainability, etc. Such initiatives by the state for assessment of clusters could be supported under the Market Access Initiative (MAI) scheme. Upon assessment of the clusters, relevant capacity building activities can be undertaken by the state government, including construction/ upgradation of physical infrastructure, building institutions, setting up of quality certification labs, common facility centres, design centres, and development of human resources, among others. The State government could avail financial support for capacity building activities under the Micro & Small Enterprises - Cluster Development Programme.

CONCLUSION

UP has the potential to achieve exports of US$ 30 billion in the short to medium term. While sectors in which the state is traditionally strong shall continue to be important from the exports perspective, there is a need to diversify the exports basket to impart much needed resilience to exports from the state. In the short to medium term, the focus of the exports strategy should be on the product champions sectors where the state possesses comparative advantage. Alongside, the state needs to provide incentives for encouraging capacity building in the underachievers products where the global market demand is growing but the state's exports are currently not competitive.

Annexure 1: Top Export Destinations and Top Importers of the Top 10 Product Champions for UP

HS Code	HS Description	Export Destination	Value of UP Exports (US$ Mn)	Share in UP's Exports	Top Importers	Value of Imports (US$ Mn)	Share in World Imports
020230	Frozen, boneless meat of buffalo	Hong Kong	662.6	23.2%	**China**	9003.8	36.3%
		Malaysia	374.9	13.1%	**The USA**	2655.6	10.7%
		Vietnam	368.1	12.9%	Hong Kong	1506.2	6.1%
		Egypt	360.8	12.7%	**Japan**	1375.6	5.6%
		Indonesia	305.8	10.7%	Egypt	1233.3	5.0%
		World	2851.9	100.0%	World	24771.3	100.0%
100630	Semi-milled or wholly milled rice, whether or not polished or glazed	Saudi Arabia	1060.8	13.2%	Saudi Arabia	1311.4	6.5%
		Iraq	644.0	8.0%	**The USA**	1195.7	6.0%
		Iran	598.2	7.4%	**China**	1022.7	5.1%
		Benin	434.5	5.4%	Iran	880.8	4.4%
		UAE	342.7	4.3%	**Philippines**	714.7	3.6%
		World	8034.0	100.0%	World	20070.1	100.0%

HS Code	HS Description	Export Destination	Value of UP Exports (US$ Mn)	Share in UP's Exports	Top Importers	Value of Imports (US$ Mn)	Share in World Imports
290611	Menthol	China	220.4	67.9%	China	250.2	29.6%
		The USA	23.9	7.4%	The USA	117.6	13.9%
		Singapore	11.4	3.5%	India	51.5	6.1%
		The Netherlands	10.2	3.1%	Singapore	45.2	5.4%
		Japan	9.2	2.8%	**Thailand**	29.7	3.5%
		World	324.5	100.0%	World	845.2	100.0%
620443	Dresses of Synthetic Fibres	The USA	84.5	18.8%	The USA	775.1	13.4%
		The UK	66.2	14.8%	Germany	552.6	9.6%
		UAE	46.0	10.3%	The UK	482.3	8.4%
		Germany	31.5	7.0%	**France**	428.9	7.4%
		Denmark	29.7	6.6%	**Spain**	353.4	6.1%
		World	448.3	100.0%	World	5765.0	100.0%

HS Code	HS Description	Export Destination	Value of UP Exports (US$ Mn)	Share in UP's Exports	Top Importers	Value of Imports (US$ Mn)	Share in World Imports
621143	Other Garments of Man-Made Fibres	The USA	95.8	27.6%	The USA	1142.7	28.3%
		Afghanistan	54.5	15.7%	**Japan**	326.2	8.1%
		The UK	34.3	9.9%	Germany	255.4	6.3%
		UAE	22.7	6.5%	**France**	239.3	5.9%
		Germany	19.2	5.5%	The UK	191.5	4.7%
		World	347.6	100.0%	World	4034.3	100.0%
711319	Articles of jewellery and parts thereof, of precious metal other than silver	The USA	1717.2	35.6%	Hong Kong	10156.6	18.8%
		UAE	1480.4	30.7%	**Switzerland**	7806.3	14.4%
		Hong Kong	529.7	11.0%	The USA	6352.3	11.8%
		Singapore	211.7	4.4%	UAE	5735.4	10.6%
		The UK	163.6	3.4%	**China**	3427.9	6.3%
		World	4827.0	100.0%	World	54033.6	100.0%

HS Code	HS Description	Export Destination	Value of UP Exports (US$ Mn)	Share in UP's Exports	Top Importers	Value of Imports (US$ Mn)	Share in World Imports
732690	Articles of iron or steel, n.e.s. (excluding cast articles or articles of iron or steel wire)	The USA	286.7	39.0%	The USA	4287.8	9.7%
		The UK	44.0	6.0%	Germany	3652.1	8.3%
		Thailand	38.6	5.3%	Thailand	2554.1	5.8%
		Germany	34.9	4.7%	**Mexico**	2277.6	5.2%
		The Netherlands	29.3	4.0%	**China**	1851.9	4.2%
		World	735.2	100.0%	World	43984.0	100.0%
760110	Aluminium- not alloyed	Malaysia	1212.0	34.3%	**The USA**	3604.4	14.9%
		South Korea	1019.5	28.8%	Malaysia	2747.0	11.3%
		China	303.9	8.6%	**Japan**	2089.9	8.6%
		Singapore	209.0	5.9%	China	1934.1	8.0%
		Taiwan	167.1	4.7%	South Korea	1864.0	7.7%
		World	3536.1	100.0%	World	24235.3	100.0%

HS Code	HS Description	Export Destination	Value of UP Exports (US$ Mn)	Share in UP's Exports	Top Importers	Value of Imports (US$ Mn)	Share in World Imports
761699	Other Articles of Aluminium	The USA	135.7	40.7%	The USA	1687.5	11.7%
		Germany	43.5	13.0%	Germany	1241.8	8.6%
		The Netherlands	25.3	7.6%	France	717.3	5.0%
		The UK	17.9	5.4%	**Thailand**	669.3	4.7%
		France	9.0	2.7%	**Vietnam**	645.6	4.5%
		World	333.4	100.0%	World	14369.7	100.0%
851712	Telephones for cellular networks "mobile telephones" or for other wireless networks	UAE	977.7	31.5%	**The USA**	49461.2	19.1%
		Germany	383.5	12.4%	**Hong Kong**	36629.2	14.1%
		The UK	258.5	8.3%	**Japan**	14907.7	5.7%
		The Netherlands	198.7	6.4%	Germany	13379.2	5.2%
		Russia	181.8	5.9%	**UAE**	13006.4	5.0%
		World	3104.5	100.0%	World	259604.2	100.0%

Note: 1. UP's exports are for 2020-21, while global imports are for 2020.

2. Countries marked in bold are those which do not feature among the top export destinations for UP for the product

Source: DGCIS, ITC TradeMap, Exim Bank Research

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