

INTRODUCTION

GLOBAL MARKET OVERVIEW

The purpose of this report is to offer a thorough analysis of the global market, actionable recommendations, and future outlook based on the month of May 2024. This monthly report offers valuable insights into the complexities of navigating rice export and import restrictions, enabling policymakers, economists, and stakeholders to make informed decisions in a dynamic global economy.

The production contribution of Asian countries proves to be higher than any other parts of the world with the particular mention of South Asian countries of Afghanistan, Pakistan and India having significant rise in production though India's procurement is relatively less than last year but the possibility of evident increase in production by the 3rd quarter of 2024 can oversee the initial less procurement because of tentative favourable weather conditions and Bangladesh looking to utilise the Boro seasonal harvest making the supply to go up while successfully producing Diabetes friendly rice and in contrast to that, the El Nino effect affecting the superiority in rice yield whereas, Philippines overcoming this effect by enhancing production technologies specialising in weather resistant rice varieties and the domestic produce fell short of the total dietary requirement in Malaysia.

The middle East country of Iran expanded their area under Integrated Crop Management with intentions to reduce pesticide use for rice and the North Asian countries of Russia and China witnessed a huge harvest whereas, China primarily produced hybrid rice and discovered new rice varieties in a short period by speed farming.

In US, the state of Mississippi expects huge harvest that can counter the effects of El Nino rice shortages in other countries and the heavy rains resulted in less than potential produce in Rio Grande Do Sul, Brazil.

The Philippines Government amended the Rice Tariffication Law (RTL), allowing the private players to take part in imports ensuring smooth supply chain and the lack of rice processing and standard factories in Afghanistan is impacting the domestic produce by the main reason being is to import despite the sufficient harvest affecting the supply of the existing produce wherein Brazil, states faced loss of quality and delays in transportation to storage sites due to floods from heavy rains has affected the cultivation by 60% where in contrast, Pakistan underwent water crisis in turn affecting the rice supply globally with possible shortage in produce.

The 5% broken rice price from Vietnam remained competitive globally with higher prices ensuring the speculated 8 million tonnes export in 2024 for higher returns and the increased production in Indonesia brought down the rice inflation after 8 months in April while the rice prices for Bangladesh declined in medium and coarse rice is to be continued for the next two months but the ineffective price contributed to food inflation challenging food security, while the Malaysian government allowed the price fluctuation in accordance with market to address local rice shortages and the demand for Indonesia is expected to exceed 31 Million Tonne with the ongoing issue that the import have met only less than 5% of the requirement.

The Indian ban on Non-Basmati Rice resulted in Pakistan capitalising on the situation, the Middle-East country, Oman showed interest in procuring Pakistan's Basmati rice and the Myanmar export relation with Spain constituted about 10,675 tonnes out of 110,000 tonnes of rice.

While Indonesia is trying to expand their export's relations to Vietnam, rumour circulated around the 10-year-old Jasmine rice being shipped to Africa.

The government of Philippines and Bangladesh have halted the commercialisation of Genetically Modified (GM) Rice due to safety, health, and legal concerns.

The partnering of The African states Lagos-Niger and the Philippines both having the same intention to bring self-sufficiency by reducing imports and EU also prohibited imports from LDCs where in contrast, China lowered the import duties.

The Rice department of Thailand introduced 10 new cultivars while the Vietnam's Agricultural Ministry took steps to ensure rice cultivation adheres to scientific and legal standards and Italy institutionalised the supply chain, updating the sector plans to focus on the research and innovation.

The Indian rice procurement gaining a decisive position in the world's procurement of rice was facing a lot of issues right from pricing to exporting the rice in the month of May especially due to the ongoing restrictions which are pertinent globally by the upcoming sections of this report.

DOMESTIC MARKET OVERVIEW

India being one of the largest rice producing countries and emerging as the largest exporter in the world for rice since 2012, is posing a different view for the month of May in terms of procurement, export and price trends in place of its restriction towards trade and several major impacts which will be discussed in much detail in this report.

The procurement being less than 10% from last year at this point but with the possibility of setting a record by the end of the 3rd quarter due to tentative favourable weather conditions and contemporarily the state of Chhattisgarh with its higher yield, provided for the central pool where it supported for the shortages in states of: AP, Telangana, UP, Odisha, Maharashtra and MP. Despite this less procurement, the FCI held a buffer stock of 4 times the buffer requirement which should be properly addressed in its liquidation and distribution.

India's policy regulations towards restriction of Non-Basmati White rice have played a pivotal role in the export market by irregular price variations domestically and globally forcing the nation to experience rise and fall in the export prices during the course of month May and the drop in domestic prices and the rise in export prices of Basmati rice market, changing the trade dynamics and rice market projections for various rice varieties.

The market for rice are diverse in its nature and are often to be addressed in terms of various risks due to its vulnerability in the reachability of the domestic produce to the world or to even attain its self-sufficiency for stabilising the market for rice across the world which the report will be purposefully aimed to give different perspectives of the commodity rice.

MARKET PROJECTIONS

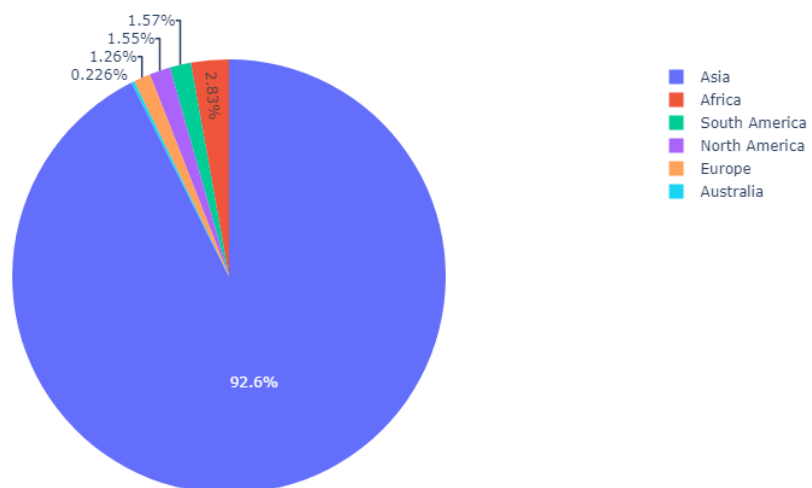
The Agriculture Information and Market System (AMIS), United States Department of Agriculture (USDA) and International Grains Council (IGC) with its market database for demand and supply served an opportunity to project the rice market for MAY 2024/25 on various aspects of Demand and Supply in major rice market countries which involves certain breakages and leakages with these aspects that will be discussed in the subsequent sections of this report to the reason for the country to encounter such challenges in the market projections of rice and the data from the International Trade Centre (ITC) and Shipment data are used for explaining the trends of Exports and Imports of the major players around the globe and concluded this section by using Food Price Monitoring and Analysis (FPMA) data for international and domestic price analysis

SUPPLY FORECAST:

Primary equation:

Total Supply = Production + Opening Stock + Imports (NMY)

The total supply forecast as per the Agriculture Information and Market System (AMIS) is consolidated for the values of Production, Opening stock and Imports NMY (net mass yield) of various countries which can be used for our purpose of market projection on rice for dynamicity in the upcoming months of the year 2024 and the underlying factors which could have been possibly affected the rice market in place of a supply dip or supply rise of countries which could be studied by the forthcoming supply chain risk and other risks.



Continent-wise Supply Forecast

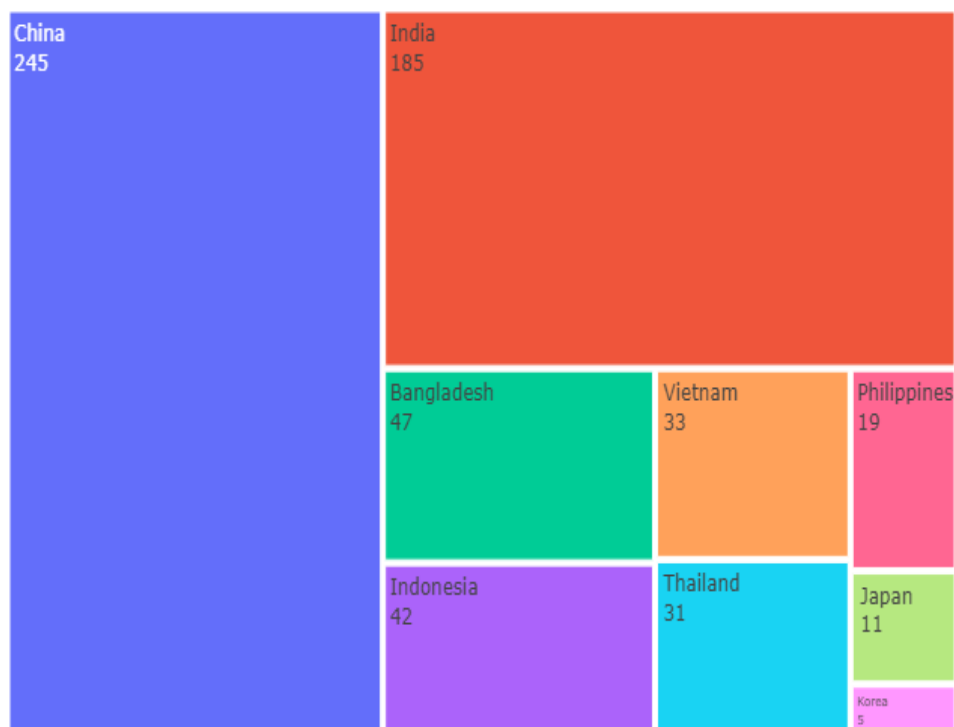
Consolidating Production, Opening Stocks and Imports from Continents

It is quite obvious to see that Asia is contributing to the total supply by having a large global proportion of any other continent with 92.6% constituting the aggregation in values of Production, Opening stock and Imports (NMY). The reason for this huge proportion is because of the global power houses of rice which are China and India having all the attributes for the rice market moving in a positive direction which includes demand too that which will be dissussed on the deamand forecast.

The following treemap would give an overview for this uneven supply forecast of the continents for the higher proportion of total supply for Asia with the different overview for different countries, as in, India which is well known for its higher production such that the total supply does'nt depend on the procurement through imports to serve for their supply.

Asia Supply Forecast for 2024/25 in Million tonnes

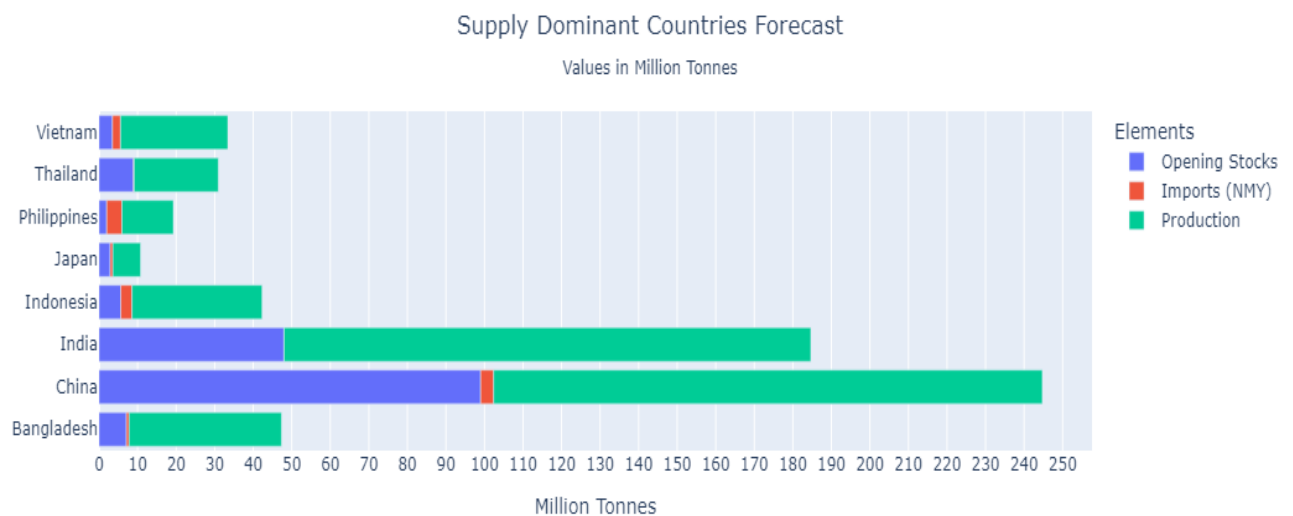
Values in Million Tonnes



China and India are taking up the global rice supply market from their total supply aggregation of production, opening stocks and imports with the huge supply gap from the other countries which is considerably due to the known fact of the higher produce from the area under harvest being relatively larger than the other countries and also to the growing concerns of demand-sufficiency from their huge population.

From the treemap above we can see the intensity of countries in contributing to the respective large proportion of total supply by Asia and It is now critical to step into those countries which are top in

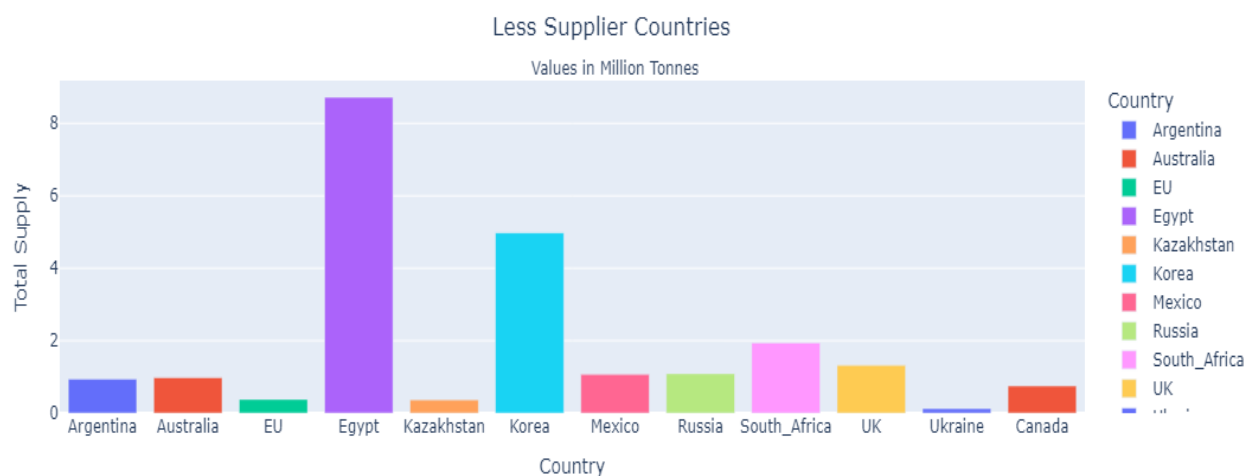
supply in their values of Production, Opening stocks and Imports (NMY) to enumerate about the underlying capacities of countries in providing for the total supply.



We can observe one thing which is almost common for all the countries that the production is playing a key role more than their imports which are concerned in providing for their total supply and the higher considerate opening stocks in the countries of Thailand, India and China which conversely states that the exports are not under way but at the same time it is not definite to this fact alone which can be addressed in the upcoming sections for the underlying reasons in this unattainable exports from the opening stocks.

Therefore, the major rice supplying countries are not dependant on the global rice market rather producing more conveying the ideology of having favourable conditions of harvest that may lead to higher total supply which can be ultimately unfortunate as it is concerned with the natural causes of the countries which will be discussed in much detail in the risks and uncertainties.

With the proper addressing of the top supplier countries, it is critical to also advocate the least supplier countries in the rice market which are: Argentina, Australia, EU, Egypt, Kazakhstan, Korea, Mexico, Russia, South Africa, UK, Ukraine and Canada.



The Countries of Australia, European Union, Egypt, Mexico, South Africa, United Kingdom and Canada with the lack of production adversely affecting their Rice supply be it domestically or internationally and most importantly affecting the countries' self-sufficiency with the motive to import more, thus proving to have a low opening stock subsequently.

On the other hand, the countries of Argentina, Kazakhstan, Korea, Russia and Ukraine having low imports or almost null impacting their total supply since their produce already being at its very low corresponding to the global market.

The various other background reasons for the variations in the datapoints in the rice market projections of various countries is being backed up by the subsequent sections, where each volatility in the rice market contributing to the ideology of coping up or trailing down from the moment despite causing discrepancies to a specific country mentioned, the general overview is normalised for the matter, to give the report a global concern in rice market affairs.

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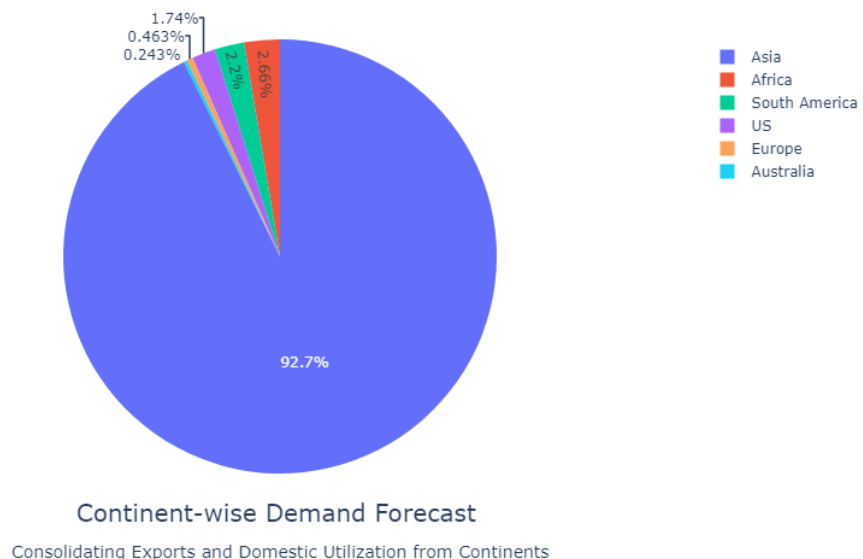
DEMAND FORECAST:

Primary Equation:

$$\text{Total Utilization} = \text{Exports (NMY)} + \text{Domestic Utilization} + \text{Closing Stocks}$$

The analysis propagates the demand forecast using total utilization which is the aggregation of Exports by net mass yield (NMY), Domestic Utilization and Closing stocks from the market database of Agriculture and Market Information System (AMIS) is leveraged for the rice market projections in terms of the nations demand intensity with the factors of total utilization considered.

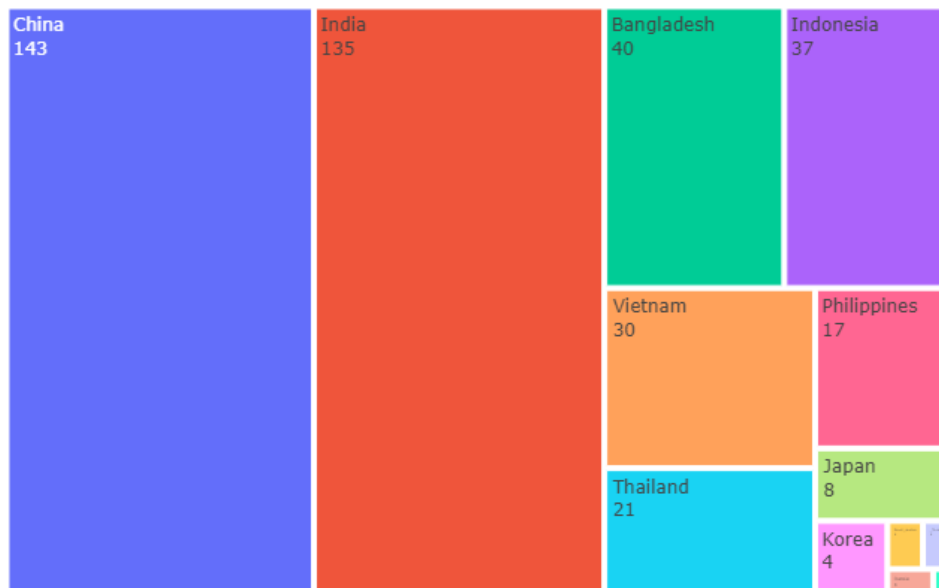
The demand capabilities of the continents with the factors of exports and domestic utilization is used in defining the continents proportion on the demand forecast for the year 2024/25, in which Asia proved to have 92.7% of the global rice market demand which is obvious as the production in the Asian countries is primarily by the rice market giants of India, China and its given large population.



This huge proportion of Asian countries on the Global rice demand forecast is due to the known fact of demand requirement that initiates the demand gap which is widely spread by China and India between the other countries which can be seen below. The aggregation in components of total utilization displayed the gap of China and India between the other countries starting from 95 million tonnes with Bangladesh being the next and increasing there on for other countries as seen.

Asia Demand Forecast for 2024/25 in Million tonnes

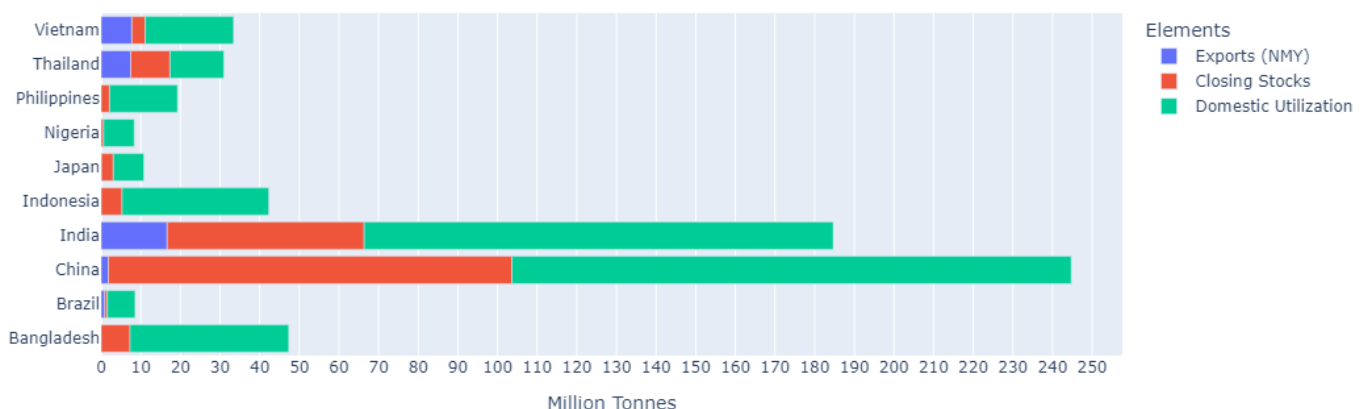
Values in Million Tonnes



The total utilization compressing of the domestic utilization that beholds with the other two factors of Closing Stocks and exports, where the other two being substantial concerns the domestic utilization which is proportionate to the demand forecasted.

Therefore, it is necessary to address the top rice demanded countries and their proportion to the components of the total utilization for the inference on the underlying domestic utilization for the forecasted demand which included countries of: Vietnam, Thailand, Philippines, Nigeria, Japan, Indonesia, India, China, Brazil and Bangladesh.

Top Rice Demand Countries Forecast

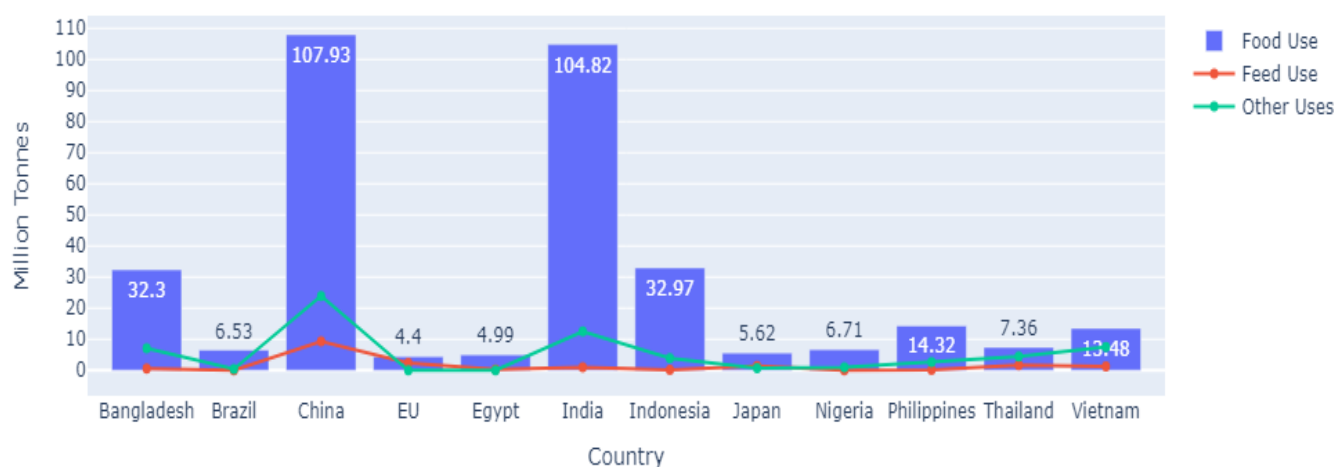


The countries of China, India, Bangladesh and Indonesia having a higher domestic utilization when compared to the other two components of exports and closing stocks, signifying their demand requirement for the upcoming month of 2024 whereas, Bangladesh, Indonesia, Philippines and Nigeria forecasted zero exports.

The closing stocks of China, India and Indonesia being significantly higher than other countries which can be advocated to their export restrictions and many other issues which are to be discussed in market risk and trade risk of all the countries in detail.

The global outlook on the top rice demanded forecast of countries from the outlay of domestic utilization within total utilization, the requirement of this domestic utilization being used is also to be taken into account to form the methodology of rice usage of each country with the user types of: food use, feed use and other uses apart from the consumption use.

Top Demand Countries User types 2024/25 Forecast



The countries of Bangladesh, Brazil, China, India, Indonesia and Philippines whose rice demands are explained substantially by food use with the possible concerns of the recent appropriate demand requirement reasons that are addressed in the forthcoming sections in which the countries of Brazil, European Union and Egypt whose other uses are forecasted null, projecting that their demand is ultimately focussed on food use and feed use solely.

The countries of Bangladesh, Brazil, Egypt, India, Indonesia, Nigeria and Philippines are completely driven towards usage of rice majorly for human food use where their forecasted feed use is almost null relative to the food use required.

Exports and Imports

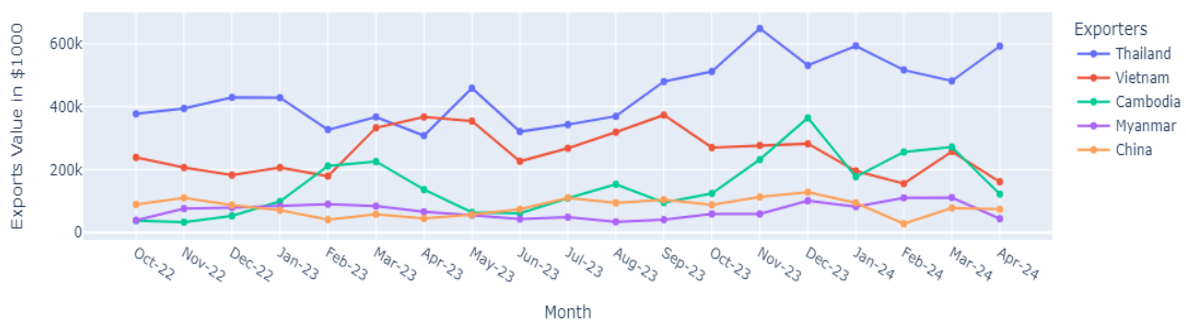
Under this section of the Market Projection, we will be discussing about the export and import trends of major countries around the world. The discussion is split between rest of the world and India. Here we will be mainly focusing on the export and import trends and their current levels based on the latest available data from the International Trade Centre (ITC).

Exports

The export volumes in the month of May were relatively less as compared to the previous month. Many factors were behind this unfavourable weather conditions that damaged a significant amount of the rice production. Effects of India's rice export ban was also one of the reasons behind the relatively low export volume.

Starting with the export trends of the major rice exporting countries other than India, we find that, in Asia, based on the ITC data from Oct-22 to Apr-24 Thailand, one of the significant rice exporting country, despite the unfavourable weather conditions, witnessed a sharp increase in rice exports from March to April contributing a major amount in the global rice market. Despite some fluctuations, there is an overall upward trend in exports, peaking notably in November 2023 and again in April 2024. Where in November 2023, its export volume was around \$648.88 Million whereas in April 2024 the export volume was around \$593 Million.

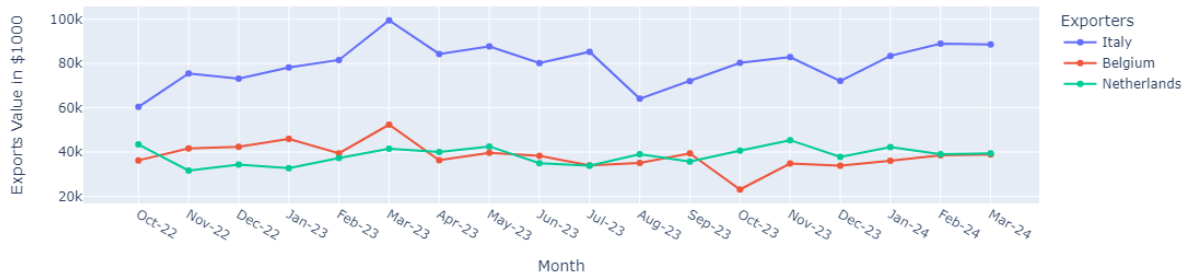
Rice Export Value of Asian Countries Over Time



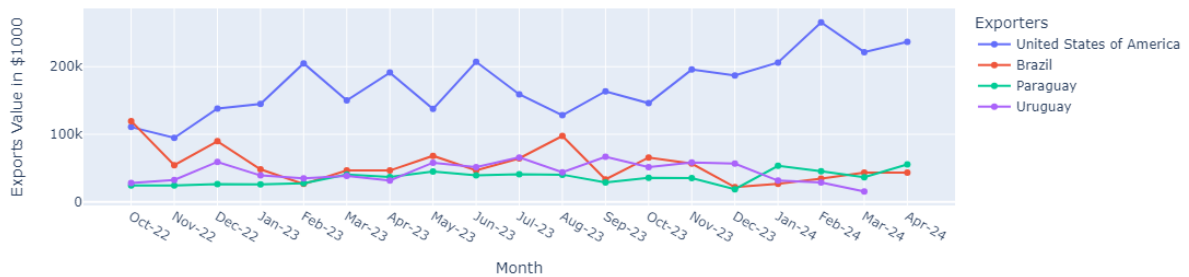
Vietnam being the second largest exporter in this group, despite a fall in the export volume from March to April, the country still has sufficient rice to export with 8 million tonnes in 2024.

Italy was the major exporter of rice in European Continent, where in the month of March i.e. based on the latest data, it exported rice of approximate \$88.603 Million. While the share of other major European rice exporting countries of Belgium and Netherlands was low as compared to Italy.

Rice Export Value of European Countries Over Time



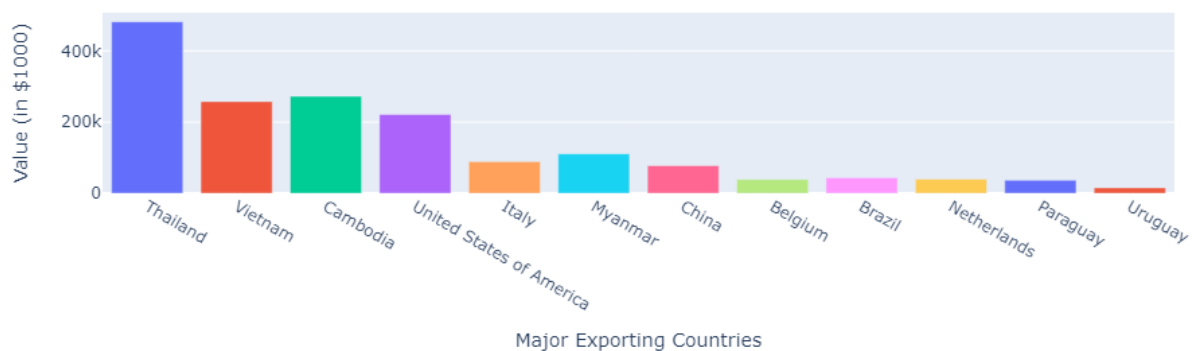
Rice Export Value of North and South American Countries Over Time



In the North and South America's continent, United States showed an upward trend in the rice exports, for the month of April, it exported over \$236.83 Million of rice. Brazil didn't show any rise in the export volume between March and April, whereas in the month of May, 60% of the rice cultivation was affected by the heavy rains in Rio Grande do Sul.

Based on the latest data for the month of March 2024 of all the major exporting countries around the globe, as shown in the following bar graph, Thailand topped the list with total exports of \$481.82 Million followed by Cambodia and Vietnam.

Exported value of Rice for the Month of March-24

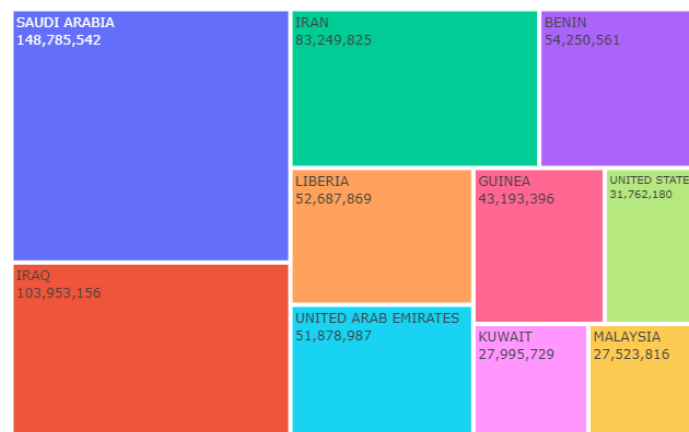


Now let's focus on the world's largest rice exporting country, India. In the month of April 2024, Saudi Arabia emerged as the top export destination for India's rice, followed by Iraq and Iran.

Owing to the Shipment Restriction India's exports dip to 27% by 16.35 MT in volume compared to the previous year but however the exports of Basmati Rice reached a record high by growing 15% in volume and 22% in value due to the rising demand from West Asian countries with Saudi Arabia being the large buyer for Indian Basmati followed by Iraq surpassing Iran in terms of purchases and Benin being the largest buyer for non-basmati Rice despite the significant dip. We have mentioned the top 10 Indian rice export destinations in the following tree diagram.

Top 10 Indian Rice Export Destinations for Apr 2024

Values in US Dollars



Total rice exports by India in April 2024 stood at the value of approximately \$ 1 Billion. While the rice procurement reached 47 million tonnes this month but as compared to last year it was a 10% decline. The government also permitted exports of 14000 tonnes of non-basmati white rice to Mauritius following the prohibition of export of non-basmati White Rice in July 2023 to secure domestic food security and prices. Looking at the volume of rice being exported by India in the past one year, we can see that, the rice exports peaked just before the ban and after rice exports ban in July 2023, we can see a sharp decline in the export volume, but the recovery can be seen from the month of Nov 2023, still the exports have not reached their prior ban volumes. Thus, the effect of the rice ban is still affecting India's export volume and hence the global trade.

Indian Exports Over Time



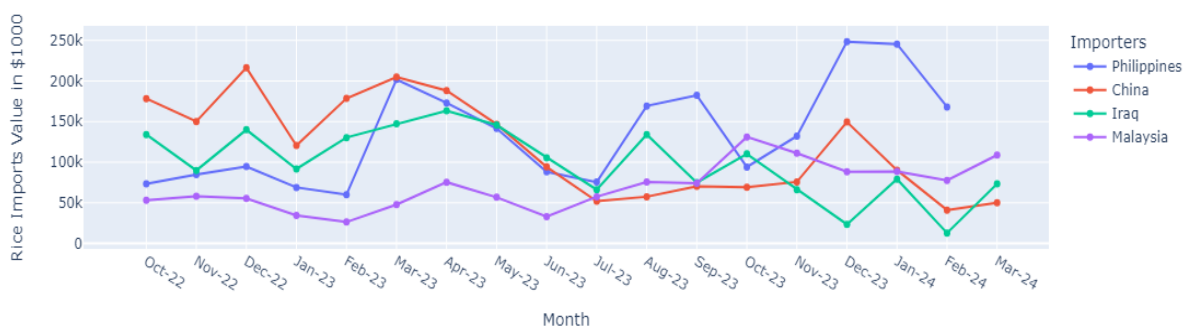
Although India is not a major rice importing country, but the rice imports have seen many fluctuations from the past year i.e. from April 2023 to April 2024. We will be discussing about this in detail in the upcoming section of Imports.

Imports

The Global market of rice saw many fluctuations in the rice imports over the past one year with some major rice consuming countries adjusting their purchasing habits. Among the major importers, Philippines remained on the top, while China, another key player witnessed a decrease in imports. This can be observed in the following figure that shows the import trend of major rice importing countries of Asia.

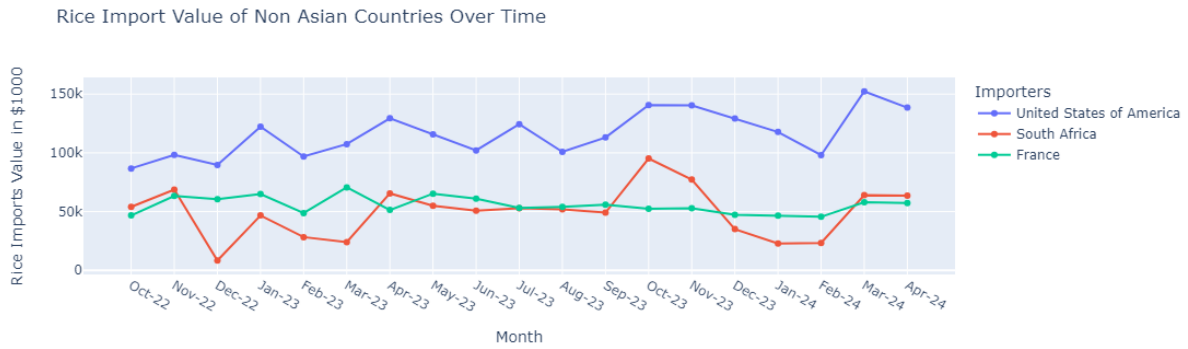
As it can be seen in the above figure, Asian major rice importing countries have saw a lot of

Rice Import Value of Asian Countries Over Time



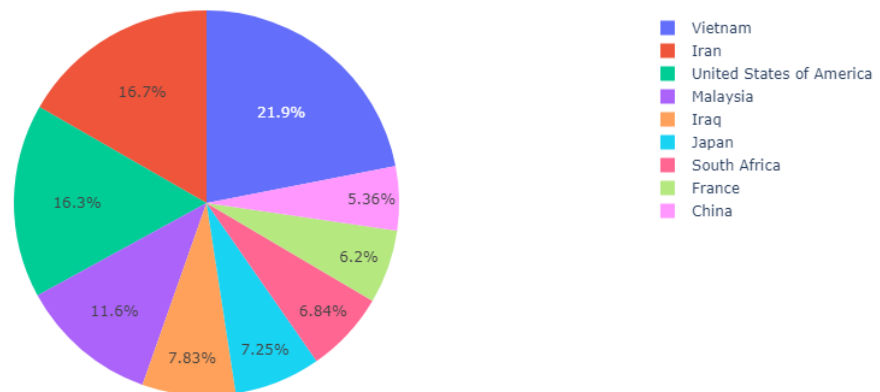
ups and downs in their import trends. The data is taken from the ITC and is from Oct 2022 to March 2024. Despite a fall in the imports by Philippines from Jan to Feb this year, it remained the top rice importing country.

While talking about the Non-Asian major rice importing countries, we were able to fetch data regarding rice imports of United States of America, South Africa and France. Among this set of countries, United States remained the top importer, where it saw a sharp increase in the rice imports from Feb to March and then a slight drop from March to April. The rice imports by France remained a relatively stable through the entire period from Oct 2022 to April 2024.



Based on the data of March 2024, we have the following countries that had a major share in the rice imports:

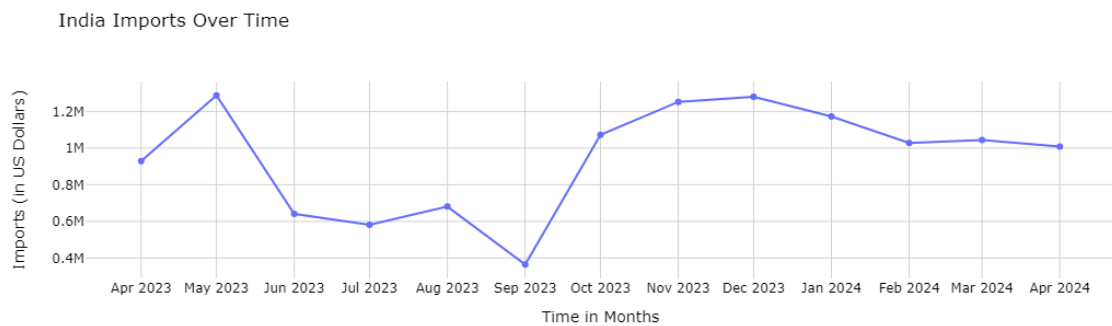
Rice Imports of Major Importing Countries (March 2024)



The top three rice importers for the month of March 2024 were Vietnam, Iran and United States (data related to Philippines was not available for the month of March) where the total value of rice that was imported by these three were around \$250 Million, \$156 Million and \$152 Million respectively. Also note that Vietnam is in top 5 when it comes to rice exports.

Though India is the biggest exporter of rice in the world, holding the title for the past decade. When it comes to imports, the country also imports rice though on a much smaller scale. It majorly imports rice from Vietnam, Thailand, Pakistan, Myanmar, Cambodia, Japan, and Italy. Vietnam is the largest supplier, providing the bulk of India's rice imports, followed by Thailand and Pakistan.

Based on the shipment data from April 2023 to April 2024, we can see that Indian Imports

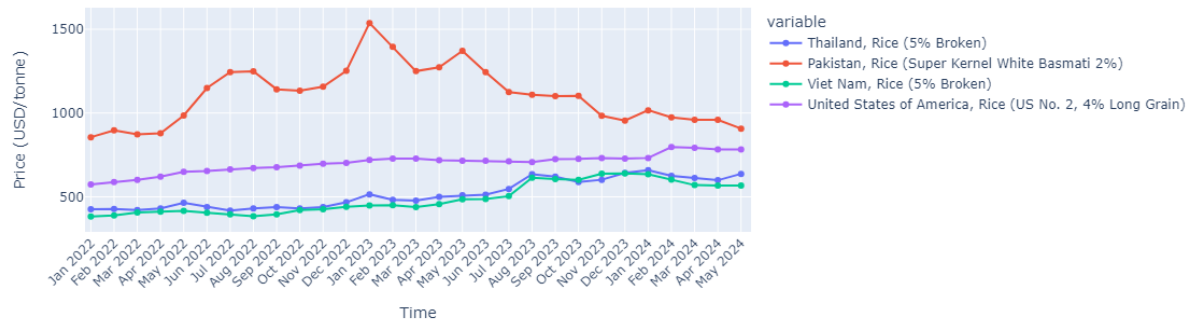


after hitting the lowest value in this time frame in Sep 2023, it took a sharp upward turn. While this year, the import volume slightly fell from Jan to Feb but after that it had remained relatively stable. The import value of rice was around \$1 Million in April 2024.

Price Analysis

In this section we will be discussing about the current updates, trends related to export prices of different rice varieties that are exported by the major rice exporting countries around the globe. This discussion will be followed by Indian market overview that will cover the trend in the wholesale and retail price of rice from Jan 2022 to May 2024. At the end we

Export Price Trend of Various Rice Varieties (Jan 2022 - May 2024)

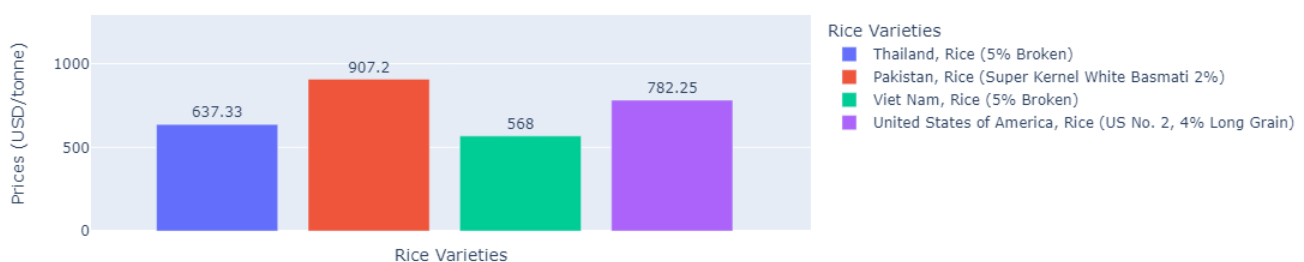


will mention the current wholesale and retail price of rice across different Indian states.

In the month of May, the rice variety exported by Pakistan i.e. Super Kernel White Basmati 2 %, was quoted at \$907.2 per tonne whereas the 5% broken rice of Viet Nam and Thailand were priced at \$568 per tonne and \$637.33 per tonne respectively. Adding more on the Viet Nam's 5% broken rice price, it fell in the last week of May due to increased supply from the summer autumn harvest. While DA Secretary, Francisco said that the rice prices will likely to decline in the starting of June (Thailand).

Talking about the trend pattern of export price of these varieties based on the Food Price Monitoring and Analysis (FPMA) data, we observe that export price of Pakistan's Super Kernel White Basmati 2% rice was more than the rest of the varieties that are in consideration throughout the entire period from Jan 2022 to May 2024. This rice variety of Pakistan attained a maximum of \$1,537.25 in Jan 2023.

Export Prices of Various Rice Varieties (May 2024)



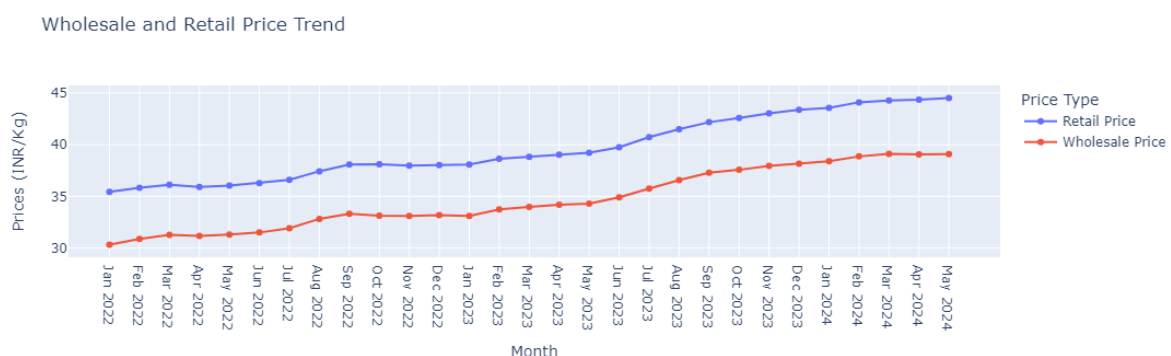
The consistent fall in the export price of this variety of rice exported by Pakistan can be attributed to the increased supply, currency depreciation etc. Though there were many fluctuations in the Super Kernel White Basmati 2% rice, but as compared to May 2022, the price actually fell by around 8% in one year (May 2022: \$985.5, May 2024: \$907.2). This above figure also tells us that the change in price of the US No.2 4% long grain rice, in May 2022 it was quoted at \$649.8 per tonne, it increased to \$782.25 per tonne in May 2024 (20.38% increase). We can also see that, the trend followed by Viet Nam and Thailand's 5% broken rice is almost same.

We have also given below a table that shows the mean, min and max export price of these varieties for this period:

Description	Thailand, Rice (5% Broken)	Pakistan, Rice (Super Kernel White Basmati 2%)	Viet Nam, Rice (5% Broken)	USA, Rice (US No. 2, 4% Long Grain)
Mean	517.365172	1106.296552	489.258621	701.12931
Min	417.500000	855.750000	382.000000	574.50000
Max	659.500000	1537.250000	639.600000	797.00000

Whereas in the domestic rice market of India, the trend pattern followed by the wholesale and retail price from Jan 2022 to May 2024 was almost same where the retail price of rice was always more than the wholesale price of rice (that makes economic sense also as higher retail prices reflects the additional costs, services, and value provided by retailers compared to wholesalers).

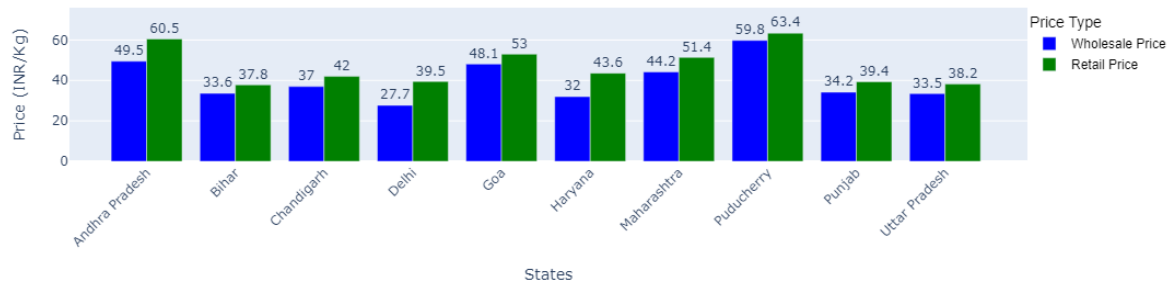
The following time series graph shows the national average price trend of both wholesale and retail price:



The data is taken from the same source i.e. Food Price Monitoring and Analysis (FPMA), from this we can observe that the national average wholesale and retail price increased from around 30 Rs/kg and 35Rs/Kg to approximate 39 Rs/Kg and 45 Rs/Kg (Jan 2022 to May 2024). That is on average, the wholesale price increased by around 30% and the retail price increased by around 25%.

While in the month of May 2024, we observe differences in the wholesale price and the retail price of rice among the Indian States and Union Territories. (Note: Some of the states were no there in the FPMA dataset.)

Wholesale and Retail Prices in Indian States for May 2024



Bihar had the lowest retail price of 37.8 Rs/Kg while it was highest in Puducherry, one Kg rice price was 63.4 Rs/Kg there. Whereas the whole sale price was in the range of around 28 Rs/Kg to 60 Rs/kg.

The Government of India, to deal with the 50 million tonnes of stockpiles of rice and to make space for the upcoming harvest decided to boost the rice distribution to those in need through the Pradhan Mantri Garib Kalyan Anna Yojana program. There is also a possibility of lower rice prices for everyone else. The consumer might benefit from cheaper rice in the open market.

RISK AND UNCERTAINTIES

GEOPOLITICS RISK:

The Genetically Modified (GMO) variety of Golden Rice having a potential effect on people's health, biodiversity and exploitation of farmers worldwide with the involvement of private companies having patents for the seeds, therefore causing adverse effects in Bangladesh during the month May, which later had Philippines to ban its produce due to safety concerns from the genetically modified rice and the 10-year-old Jasmine Rice from Thailand though confirmed consumable by Department of Medical Science (DMS), there is a possibility to the fact that it was suspected to be in a contamination-prone warehouses which are in plans to be traded to Africa by June who might suffer from this trade.

The rice inflation in Bangladesh and the reduction of import tariffs by China with already being a potential importer of rice affecting the inequality of the people around the world by creating international trade imbalances and also harming the local producers for the speculated months.

The possible surge of rice prices in Pakistan as per International Monetary Fund (IMF) recommendations to reduce sales tax exemptions and completely eliminating exemptions in tribal by June 30 impacting food security, self-dependency and the possible food scarcity in Indonesia and Pakistan.

The EUs decision of putting a ban on the imports from the least developed countries (LDCs) to defend European production standards and labour rights can significantly change the rice trade within the domestic boundaries. As the rice suppliers that were dependant on these LDCs imports might have to face the trade risk due to this decision when the domestic supply is not self-sustaining.

The decision of Pakistan gaining the Geographical Indication (GI) for Basmati Rice is being opposed by Italy and urging the Minister of Agriculture to reject the application as this would lead to duty exemptions for Imported Basmati Rice which affects the Italy's rice market but however, Pakistan attaining the Protected Geographical Indication (PGI) is not possible as India indicated as the primary owner for GI of Basmati Rice for 200 years now.

In India according to the Mint's report, the average retail price of rice on the domestic market has jumped 13.1% year on year, prompting the government to increase measures to help domestic consumers amidst the general election, the results of which will be announced in June.

The India's rice exports for the rest of the year could see further contraction as the government reportedly plans to impose more restrictions on exports to curb rising domestic prices, said TREA, which can impact India's international export relations and with the Rice export prices surged up, the other countries opting to choose cheaper varieties of rice for exports may lead to affectedness towards trade relations for the countries who desire top quality rice varieties like USA who prefer only 2-3% broken rice.

India with its rice export restrictions in place can be a risk creating factor to the other nations geopolitically but also the market risks faced by major rice marketing nations were also adverse in its effects following the regulation which are discussed below.

MARKET RISK:

The certain Asian Countries were widely affected by rice inflation and deflation where Bangladesh faced rice inflation due to ineffective price monitoring whereas, Philippines faced higher prices of rice with the inflation being lower than expected causing disregard to the rice market and Indonesia experiencing rice deflation of 2.72 % Month over Month (MoM) which caused due to alignment for the increased production.

The climate played a significant role in certain countries where the Heat intolerant rice yields from Bangladesh supplied rice with lower productivity and degraded quality to the rice market, whereas Pakistan suffered from water crisis which created plans to move from production of rice to rose with the reason of ban on rice cultivation in Upper Sindh. The El Nino effect which damaged 129,350 metric tonnes of rice in Philippines with the value of P3.14 billion whereas, the countries of South America and USA owing to the fact of India's ban on exports are now dependant on the off-season harvest which are now under pressure due to the El Nino effect.

The Indonesia's demand requirement of 31 million tonnes in 2024 out of which despite the imports they fell short by 5% of the demand requirement portraying the ineffective domestic rice market and Malaysia constituting only 65% of the nation's needs form which dietary requirement for rice which is double that of wheat posing a pressure for enhancing domestic rice market.

The major price pressures on rice in countries of Africa who faced average price rose to 27.4% in march than any other food prices as per National Bureau of Statistics (NBS) causing a disparity is the prices across states where Nigerian state Niger recorded the highest price with Rs.95.2 and the lowest in Benue State with Rs.55.2 for 1Kg of Parboiled Rice among the rice market, whereas Afghanistan faced decline in Pakistan rice prices in Kabul which means that the import market for Pakistan rice in Kabul is not advisable for Afghanistan in creating market efficiency from imports and Pakistan increasing their rice prices to reduce sales tax exemptions as per the IMF.

The importing of countries also pressurised the rice markets where Afghanistan faces lack of rice processing and standard factories even though their rice are of high quality it is not available for local markets because of poor packaging systems which made them to import rice leaving the domestic rice market produce unnoticed and China lowering the import tariffs affecting the market for domestic produce too.

The quality of rice being in process also degrades the market where the 10-year-old Jasmine Rice from Thailand which was in the suspicion of contamination prone warehouses that are now in plans to be auctioned to Africa by June can affect the rice market and the Middle-East country Oman post India's rice export ban, the government procuring comparability less quality Basmati Rice from Pakistan where before they purchased the renowned GI tag Basmati Rice from India.

Domestically, India Due to the rising concerns of shortages of rice stock in certain states might have taken a toll on the surplus buffer stock which is now diverted towards distribution and the plans to provide to Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY), thus liquidation is now under pressure which ultimately reduces the export quantity with the global consumption pattern of major importing countries of India like Indonesia and Bangladesh now reaching a record high may lead to global market risk when India's export quantity is limited from the buffer stock.

The market for non-Basmati Rice is now under huge pressure in the global market due to the strict export policy regulations implemented and the potential risk of high export price for Basmati Rice affecting the Global market for Indian Basmati.

The switch from the 25% non-Basmati broken rice to 5% Non-Basmati broken rice amid food inflation concerns may lead to market risk for 25% broken rice where countries like Africa desire 25% broken rice.

The plans of upliftment of the regulations for exporting 14,000 tonnes of Non-Basmati White Rice to Mauritius alone, affecting the other major countries which require this rice variety impacting the market for India's rice variety to the other countries due to this bulk trade to a specific country.

Owing to all these shipment restrictions of rice, India's exports dip to 27% by 16.35 million tonnes compared to the previous year posing the consequences of India's rice ban export which globally affected the series of shipments encountered all these years by creating a trade risk.

TRADE RISK:

Trade related risks in the global market of rice depends on many factors which include exchange rate fluctuations, political risks from regulatory changes, natural disasters of floods and droughts, logistical delays and so on. In this month, the rice cultivation was severely affected in the continents of America and Asia due to floods and droughts. Heavy rains and flood in the state of Rio Grande do Sul affected the crop which resulted in loss of quality and quantity, poor transportation due to damaged roads affected the trade to a significant level while the heat intolerant rice varieties in Bangladesh suffered due to heatwaves and droughts. Extreme heatwaves and lack of rain due to El Nino damaged rice for P3.14 billion and losses of 129,350 metric tonne out of 58,226 hectares.

The rice producers in Pakistan have expectations from the country's Geographic Indication (GI) application of Basmati Rice. As the country is planning to capitalize on the India's Rice export ban situation, this GI application plays an important role in determining Pakistan's Exports to EU and the anticipated trade risk. Philippines has also restricted imports to encourage direct buying from the local farmers beyond that the country is the world's top rice importer, this restriction on imports may affect the domestic rice market in terms of lack of proper supply which in turn results in poor trade of this cereal. The opposite happened in the Asian country of China, where the Finance Secretary Ralph Recto's proposed to further reduce import duties on rice below the current 35 percent until the end of 2024. The aim behind this proposal was domestic rice price reduction but the critics argued that lowering tariffs could lead to an influx of imported rice, potentially harming the local producers, faced with trade risk due to this, influencing their production level decisions.

The Genetically Modified Rice popularly known as the GM rice was in news highlights this month. Activists in Dhaka raised concerns about the health and environmental risks of cultivating GM crops Golden Rice and Bt Brinjal in Bangladesh. They cited the Philippines' ban on these crops due to insufficient scientific assurances and urged Bangladesh to reconsider their approval, emphasizing the need for clear public communication. This can affect the trade and potential investment for this rice varieties as despite these concerns, this variety can combat Vitamin-A deficiency.

Domestically, India with the possibility of further export restrictions to bring down the domestic rice prices which is peaking at an increase of 13.1% Year over Year (YoY), which is brought into light for the major importer countries of Non-Basmati White Rice who may now not expect the former trade flow from India. However, during the 3rd week of May, the price of domestic Basmati Rice varieties which notably reduced giving us the indication of possible high export of Basmati Rice in the coming months since the aim of domestic prices have come down and the potential plan of upliftment of base price of Aromatic Basmati Rice export of Rs. 79,372.50 (950 USD) can now be made possible.

Analysts also believe that India's export restriction on white rice and steam rice, currently capped at 25% and 15% of domestic output respectively, could be further reduced to 5% to ensure adequate stock available for domestic consumption proving that when further reduction of supply to the primary importer countries is implemented can cause series of policies to be potentially altered globally in order to overcome the situation of India's rice ban and also the policies that are to be/in place to maintain self-sufficiency and scientific compliances which affects the rice market.

POLICY RISK:

The laws enacted and any discrepancies towards the existing laws are creating supply breakages, where Bangladesh banning rice polishing impacting the quality, improved shelf life, better mineral absorption thus overall affecting the marketability of rice whereas, the Philippines court has revoked biosafety permits of Genetically Modified (GM) Rice for commercialisation until proper propagation and related activities until rice compliance is proven and Ministry of Agriculture and Rural Development (MARD), Vietnam is taking actions for complying with the scientific standards and legal restrictions dismissing unauthorised and unscientific methods.

The upliftment of Rice Tariffication Law (RTL) by Philippines such that the private players can indulge in imports apart from the National Food Authority (NFA) which when later considered for restoring trust in NFA for managing the rice supply and prices with the buying of Milled Rice up to 30% from accredited importers that are strengthening the drawbacks of the local produce and producers and the possibility of China to reduce the import duties further down from the current 35% as supported by the finance secretary Ralph Recto's proposal, this measure is to curb rice prices with the government targeting a 20% reduction by September in place of the rice inflation being 23.9% in April reducing from 24.4% in the previous month which states that the imports can curb the rising rice price but at the same time lowering tariffs could lead to influx of imported Rice, potentially harming the local producers.

Despite the ban on cultivation of PUSA-44 which requires long-duration and higher irrigation, the reluctancy of Punjab paddy farmers proved to take a toll on conserving water of 5 billion cusecs.

Domestically, the Indian government as per the Trade and Export Authority (TREA) and Ministry of International Trade (MINT) intimated that there may be severe further export restrictions taking place in the upcoming months affecting the primary export destinations of India.

The Indian Government with the regulations for the export of Aromatic Basmati Rice currently at a base price of Rs.79,372.50 (950 USD) per tonne imposing a strict trade outlook since India owns its Geographical Indication (GI) for basmati Rice.

The Directorate General of Foreign Trade's (DGFT) statement on July 2023: "Export policy of non-basmati white rice (semi-milled or wholly milled rice) whether or not polished or glazed is amended from free to prohibited." Later in August 2023, the Indian government set a minimum floor price on exports of Basmati Rice so as to prevent exports of Non-Basmati White Rice.

With the various policies that work on bringing the stability in the rice market, the supply chain risk caused due to the irresistible climatic conditions that are almost inevitable to resolve on issues

arising on the disruption towards the reachability of the produce to become a consumable end product is to be discussed in much detail below.

SUPPLY CHAIN RISK:

The improper irrigation practices in Pakistan leading to domestic supply breakage, where expansion of exports notifying 76% increase compared to the previous fiscal year as per the State bank of Pakistan (SBP) facing hindrance of inadequacy in the supply for domestic market and improper irrigation practices along with an increase in area under cultivation keeps the self-sufficiency at stake.

The El Nino effect also taking a toll on the supply flow of Pakistan where the possibility of moving from rice to rose following the ban of rice cultivation in Upper Sindh, where this ban is announced every year at the end of April or early May to limit the waterlogging, salinity and drought-like conditions caused by successive rice farming and in USA and South America the El Nino affecting the off-season harvest and the supply which is now uncertain following the India's ban on rice exports.

The climatic conditions of Brazil caused delays in transporting rice grains due to heavy rain in Rio Grande Do Sul and the concerns of climate change including heatwaves and droughts causing ineffective agriculture produce by reduced grain quality and the requirement of more irrigation for a given land resulting in water scarcity for the people especially in Bangladesh which is now to be solved by biotechnological solutions for climate-resilient measures and the emission of methane from agricultural produce is also to be solved by apt farming techniques on wetting and farming of rice field to enhance human living.

The input methodology having a pressure in the supply chain where Afghanistan possessing lack of packaging techniques by inadequate standard factories in which the domestic produce is satisfying only over 61% of the demand for the nation and thus indulging in imports of rice leaving the domestic produce unnoticed in the market and Pakistan with the tax on tractors and pesticides incurring more cost on Agricultural inputs causing rice prices to go high.

The meeting between the Board of Directors of National Rice Agency and the Minister of Agriculture, Lolobrigida addressed supply chain priorities of safeguarding imports for the Least Developed Countries, enhancing research and drought issues in affecting rice production.

Domestically, the Indian government possessing the Food Corporation of India (FCI) buffer stock which was at 4 times the buffer requirement with 534 million tonnes which needs proper liquidation, distribution and plans for using it for Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) and in addition to this there will be a possibility of huge harvest due to the La Nina effect happening on August and September which will have a forecasted yield of 135-138 million tonnes during the months of June and July in place of a sufficient rainfall as per the India Meteorological Department (IMD). Thus, if the projections of huge harvest owing to the La Nina effect which forecasts yield of 135-138 million tonnes is not witnessed during the months of June and July due to lack of rain, the major importing countries of India may suffer from the flow of rice trade and plan disruptions. The distribution to the PMGKAY from the FCI surplus buffer stock leads to the reduction in India's contribution towards Global exports and also the concerns for curbing the rising domestic retail prices, there can be more export restrictions implemented according to TREA.

Despite the export duty of 20% which was extended to March 31 for Parboiled Rice, the Indian Parboiled Rice stays competitive in the global market where the record for 2024 till May 3rd week of long grain parboiled milled rice 5% STX FOB is USD 531/Metric Tonne and that of Thai long grain

parboiled milled rice 100% STX FOB is USD 606/Metric Tonne. (STX FOB refers to standard export terms, free on board) and in contrast, the 3rd week of May India's rice export prices rose higher which made the rice importers choose relatively cheaper offers from India. This experience shows that there can be chances of importer countries diverting their choices from the most desired export variety to cheaper varieties due to the increase in export prices of rice.

The important relations concerned from the various risks which are associated with the primary rice market countries are put down below as key takeaways.

KEY TAKEAWAYS:

- The Asian countries of Bangladesh and Philippines facing higher rice prices along with Africa who witnessed rice prices higher than any other food prices and Indonesia experienced rice deflation which caused disregard to the rice market.
- The increase in rice inflation in Pakistan and with realised imports being less than the demand requirement in Indonesia rice market causing instability in the rice market. The possible export of 10-year-old-rice from Philippines to Africa causing geopolitical risks coming across different trade relations primarily revolving from the export ban and high export prices from India where USA and Oman facing issues on quality rice imports.
- The patent for Genetically modified rice varieties formally adopted by Bangladesh which was banned by Philippines affecting the farmers worldwide with adaptation of patent seeds by private companies.
- The climate challenges faced by Bangladesh, Pakistan, Philippines, USA and South America causing disruptions to the trade flow with less yields, degraded quality, water crisis, and transporting issues.
- On the other hand, the regulatory framework or techniques in Bangladesh, Philippines, Vietnam complying to the legal restrictions and scientific standards against the methods of rice polishing, biosafety permits for genetically modified rice commercialisation are on check, and in contrast, Indian government despite banning the rice variety which requires long-duration and higher irrigation displayed a state of reluctance by the Punjab farmers on this ban.
- The India's export restrictions on non-basmati white rice which was later altered to exempt the trade to Mauritius by exporting 14,000 tonnes affecting the major importers of India by this huge procurement to a single nation negatively concerning the trade flow of rice in place of the ongoing plans to reduce the capped exports further down by 5% to ensure adequate domestic supply.
- The imports and the reduction of import tariffs in the countries of Afghanistan, Philippines, and China which hindered their domestic produce, where on the other hand, the GI tag application claim for basmati rice by Pakistan can have an effect in determining exports to European Union with the tax exemptions in place for the anticipated trade risk especially when Pakistan is notifying export expansion of 76% increase from the previous fiscal year.

POLICIES AND REGULATIONS

Policies and regulations play a key role in determining the flow of trade in the global market. In this subsection we will be discussing mainly about the Policies and Regulations that took place in the month of May 2024.

Major Policy and Regulation changes around the Globe:

This month witnessed many changes in the policies and regulations for the rice around the world. Beginning with the India's state of Punjab, the Agricultural Department banned the cultivation and sale of PUSA-44 paddy, which is a long duration high yield variety that requires higher irrigation and 158-162 days to grow. The ban aims to conserve water-saving around 5 billion cusecs and reduce stubble burning and a law was passed in the neighbouring country of Bangladesh to ban rice polishing, it will be in effect from the Aman season (June-December), the food minister stated that due to excessive rice trimming and polishing, 16 to 20 lakh metric tonnes of rice are wasted and this law can save that quantity and will help consumers to purchase rice at lower prices.

The Rice Department, in Thailand introduced 10 new rice cultivars that are of better quality and suitable for growing in any area of the country, as well as resistant to droughts and floods while reducing fertilizer use and greenhouse gas (GHG) emissions. While in Russia, the Ministry of Agriculture is planning to increase rice production to 2 million tonnes in the next three years by creating a separate land registered for rice cultivation. The land register is expected to improve the audit and utilization of agricultural lands and promote specialized crop rotation for rice. The Rice Tariffication Law (RTL) in the Philippines, has removed the restriction of only the National Food Authority (NFA) having the authority to import rice by allowing private players to also import and the Philippine Rice Research Institute (PhilRice) under the Department of Agriculture has urged farmers to plant heat-tolerant rice varieties, specifically NSIC Rc 600 and Rc 602, in preparation for projected temperature increases. These varieties can yield up to 7 tonnes per hectare, significantly above the national average of 4 tonnes/ha.

In Italy, the Emilia-Romagna's legislative assembly approved a bill allocating over 7 million Euros for agricultural interventions, including 500,000 Euros specifically for rice sector using certified seeds. Apart from this the Official Gazette of Catalonia announced environmental cooperation aid for rice field water management, this aid is aligned with the CAP Strategic Plan 2023-27, aims to control weeds in Catalonia's rice fields through less harmful methods. In the Middle East, a total of 5000 hectares of Integrated Crop Management (ICM) rice production is being implemented across Gilan, Mazandaran and Golestan provinces of Iran, this project focuses on the promotion of certified seeds use, integrated pest management and reduction in the use of chemical pesticides.

KEY TAKEAWAYS:

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- A law was passed in Bangladesh to ban rice polishing, it will be in effect from the Aman season (June-December)
- The Rice Department, in Thailand introduced 10 new rice cultivars that are of better quality and suitable for growing in any area of the country.
- The Rice Tariffication Law (RTL) in the Philippines, has removed the restriction of only the National Food Authority (NFA) having the authority to import rice.
- In Italy, official Gazette of Catalonia announced environmental cooperation aid for rice field water management, this aid is aligned with the CAP Strategic Plan 2023-27, aims to control weeds in Catalonia's rice fields through less harmful methods.

MARKET UPDATES

In this section we will be covering the current major news around the rice. The month of May 2024 witnessed a confluence of factors shaping global trade flows and prices. We will be citing the major news that shaped these factors in detail.

India's Rice Export Curbs Continue to Reshape Global Trade (May 2024):

The impacts of India's export restrictions on non-basmati white rice, which was implemented last year in July to safeguard domestic food security, remains a central theme in the May 2024 rice market. While this decision aimed to stabilize domestic rice prices and supplies, it triggered a ripple effect across the globe. Owing to the Shipment Restriction India's exports dip to 27% by 16.35 MT in volume compared to the previous year. Despite this there was some relaxation shown in the exports ban, the Government of India permitted export by National Cooperative Exports Limited of 14000 tonnes of Non-Basmati White Rice to Mauritius, earlier the country used to export such variety of rice to Nepal, Cameroon, Cote d'Ivoire, the Republic of Guinea, Malaysia, Philippines, Seychelles, UAE, Singapore, Comoros, Madagascar, Equatorial Guinea, Egypt, and Kenya. The result of the export ban is that, the domestic rice stock have reached nearly 50 million tonnes, exceeding the required buffer of 13.5 million tonnes. To manage this surplus, the government is planning to increase the rice distribution under the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) and may lower prices for open market sales [THE TIMES OF INDIA].

Filling the Gap: New Opportunities for Other Exporters:

India's export curbs resulted in a void in the global market of rice, presenting new opportunities for the other major rice exporting players. In fact, the neighbouring country of Pakistan, for instance, saw a substantial rise in rice exports, experiencing a record 76% increase compared to the previous year [Source: Associated Press of Pakistan]. The country is planning to expand even more, after the India's ban on rice exports, Pakistan is looking to capitalise the situation by expanding the exports which made them achieve the above and crossing record \$3.5 billion during the current fiscal year. Oman government also showed interest in procuring Pakistanis Basmati and PK386 rice. In contrast, Coldiretti and Filiera Italia opposed Pakistan's proposal to recognize Basmati as a Protected Geographical Indication, fearing it would lead to duty exemptions for imported Basmati rice, negatively impacting Italy's rice market. However, that application mentions that Basmati rice is also grown in specific areas of India, supporting the claim that India is the Primary owner for Geographical Indication (GI) of Basmati Rice which has been grown there for 200 years, acting as the boon for the farmers in Indian States.

Price Fluctuations and Shifting Supply:

The global rice price remained relatively stable in May. Vietnam, one of the top 5 exporters, benefitted from its summer autumn harvest, leading to a surge in exports of about 35.5% year-on-year. However, this led to a slight decrease in Vietnamese 5% broken rice prices. In contrast, there was a concern about the impact of El Nino on heat invariant rice varieties in Philippines. To overcome this situation, The PhilRice under DA planned to plant heat tolerant varieties owing to the El Nino effect that yields 7 tons per hectare which is more than National Average of 4 tons per hectares. Thailand also implemented 10 new rice cultivars, these are suitable to grow in any region of

the country and are resistant to droughts and floods. Adding more about Thailand's 5% broken rice, prices rose slightly to \$600 per ton from last week's price range of \$588 – \$595, with traders attributing the increase to fluctuations in the exchange rate.

Innovation, Sustainability Efforts and Self-Sufficiency:

A focus on research and development emerged in this month. China reported success in speed breeding rice varieties, which involves cultivation of new rice varieties and fosters multiple generations of rice that can be grown in short period of time, aiming to accelerate the development of new rice cultivars. Thailand also introduced new rice cultivars that are resistant to droughts, flood and with a lower greenhouse gas footprint. While in Italy, a major European rice producer, emphasized on research and innovation in its rice sector plan.

Talking about the self-sufficiency part, several countries prioritized domestic rice production. Bangladesh promoted women's participation in agriculture and also banned rice polishing to potentially improve the yields. Indonesia's increased domestic production led to rice price deflation after a facing inflation for 8 consecutive months. The US also projected a significant increase in rice acreage due to favourable weather conditions. Moving to Italy, which accounts for half of the EU's output in rice, advanced the institutionalization of the rice supply chain table and updated the sector plan, emphasizing research, innovation, and assisted evolution techniques. The Ministry of Agriculture in Russia is planning to increase rice production to 2 million tons in the next three years by creating a separate land register for rice cultivation. This is part of an action plan to enhance rice farming until 2030 and aims to resume rice exports, which have been halted since an accident at a hydroelectric complex in 2022.

Debate over GM Rice in Southeast Asia:

This month saw renewed debate over Genetically Modified (GM) rice in Southeast Asia. Bangladesh witnessed activists raising concern about potential environmental harm, health related risks and corporate control associated with this rice. This suggests ongoing resistance to its adoption. Meanwhile, the Philippines' Court of Appeals revoked permits for commercially growing the golden rice, a Vitamin A rich GM variety. While proponents supported for its safety and health benefits, opponents highlighted traditional rice variety and environmental risks.

KEY TAKEAWAYS:

- Government of India permitted export by National Cooperative Exports Limited of 14000 tonnes of Non-Basmati White Rice to Mauritius.
- India's domestic rice stock have reached nearly 50 million tonnes, exceeding the required buffer of 13.5 million tonnes. To manage this surplus, the government is planning to increase the rice distribution under the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY).
- Oman government showed interest in procuring Pakistanis Basmati and PK386 rice.
- Coldiretti and Filiera Italia opposed Pakistan's proposal to recognize Basmati as a Protected Geographical Indication.
- The PhilRice under DA planned to plant heat tolerant varieties owing to the El Nino effect that yields 7 tons per hectare which is more than National Average of 4 tons per hectares.
- Thailand's 5% broken rice, prices rose slightly to \$600 per ton from last week's price range of \$588 – \$595, with traders attributing the increase to fluctuations in the exchange rate.

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- Indonesia's increased domestic production led to rice price deflation after a facing inflation for 8 consecutive months.
- The Philippines' Court of Appeals revoked permits for commercially growing the golden rice, a Vitamin A rich GM variety.

FUTURE OUTLOOK

The high yield contributing to the future outcomes was evident where Bangladesh's Boro harvest with huge yield causing the prices to cool down where the Medium and Coarse variety prices decline in the Dhaka market which is to be continued for the next two months where in May the 50 kg Miniket Rice wholesale prices fell by Rs.213 and the BR-28 variety price dropped by Rs.2.25 per kg whereas the Philippines' Department of Agriculture (DA) is seeking a 15% in the Budget of National Rice Program (NRP) next year to further boost local rice production and ensure country's food stocks by proposing a P35. 74 billion funds for the NRP in 2025, 15.7 percent higher than its P30 and the Ministry of Agriculture in Russia is planning to increase rice production to 2 million tons in the next three years by creating a separate land register for rice cultivation, this is done to promote rice farming until 2030 and aims to resume rice exports, which have been halted since an accident at a hydroelectric complex in 2022. The land register is expected to improve the audit and utilization of agricultural lands, especially reclamation lands, and promote specialized crop rotation for rice and on the other hand, the Rice harvest in Mississippi is expected to have a good yield this year due to favourable weather condition which will be minimally affected by typical summer drought conditions with proper irrigation practices and flooding such that the DA forecasts a 33% increase in rice acreage compared to the previous year.

The rice price concerns the future rice market where the depreciation of the Philippines Peso with the elevated global rice prices and the import value and volume being higher causing the tariff collection to pick up which are funded for farmers that will in turn provide more tariff collection in the future and the National Irrigation Administration (NIA) of Philippines set to sell rice at P29/Kg (Rs.41) by August and the fact following India's ban on export of non-Basmati Rice and the El Nino effect impacting off-season rice production in other countries which could affect the Global Rice supply. Despite these affairs, as per United States Department of Agriculture (USDA), the average farm prices are to be brought down in place of increased production.

The implementation of the biotechnological techniques such that despite the opposition to the GM rice, it can combat Vitamin-A deficiency which was first adopted in Bangladesh and the Philippines' development of weather-resistant rice varieties which are heat tolerant that yields 7 tonnes per hectare which is more than the national Average of 4 tonnes as per the Philippine Centre for Postharvest and Development Mechanization (PhilMech) for withstanding the El Nino effect whereas techniques of Thailand's Ideas on the implementation of the new 10 rice cultivars which is suitable for growing in any region of the country which are resistant to droughts and floods that prevents several Environmental degradations such as GHG emission providing for their tag of being one of the top producer and exporter of rice and on the other hand, Chinese scientists succeed in speed rice breeding which involves cultivation of new Rice varieties and fosters multiple generations of rice to be grown in short period of time whereas, the total of 5000 hectares of Integrated Crop Management (ICM) rice production is being implemented across Gilan, Mazandaran, and Golestan provinces in Iran, with Gilan providing 1000 hectares. The project aims to promote the use of certified seeds, integrated pest management, and reduce chemical pesticide use.

The Exporting and importing factor in the Future Rice market where the Federation of Filipino Chambers for Commerce and Industry (FFCCCII) on a request to lower rice tariffs to help bring down the price by 20% in September and Indonesia trying to expand their export relations to Can Tho (Vietnam) and the countries are known to boost many areas for cooperation in the future, particularly in agricultural research and food supply for the fact that Vietnam has claimed self-sufficiency such that to the capability of Exporting 8 million tonnes in 2024. Furthermore, China being the power house of hybrid rice with 211 million tonnes produced in 2019 accounting for

almost 28% of global supply is providing the latest solution to Indonesia despite being the third largest producer in the world, self-sufficiency is always a doubt which can now be resolved by China.

The evolution in Agricultural processes may change the conventional supply dynamics where rice being the staple crop for half of the world's population particularly in the tropical countries of Asia, South America and Africa provides Vitamin B1 deficiency grains which is now can be overcome by the rice which expresses a gene that sequesters Vitamin B1 by the method of growing it in glasshouses, harvesting and polishing which ensured increase in Vitamin B1 content in rice grains which then seeded in an experimental field in Taiwan for several years and needs regulatory steps relating to biofortification by genetic engineering will have to be taken before these plants could be cultivated and commercialised.

In addition, the Saudi Food Show is the Kingdom's largest annual event for food and beverage sourcing. The event is being held in Riyadh from May 21-23 where over 1,000 exhibitors from 97 countries are taking part in the exhibition. Among the exhibitors are also 30 Pakistani companies that are taking part in the event, the Trade Development Authority of Pakistan (TDAP) with Pakistan looking to boost their market share in Saudi Arabia.

Domestically, the market surplus in the Indian rice market prevailing in the late May is more than the early May shows that the aims on accommodating a strong upcoming kharif harvest and the government planning to increase rice distribution under the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) that can lower prices for open market sales.

ACTIONABLE INSIGHTS

Based on the research conducted so far, it was evident that the global market underwent significant challenges and opportunities across multiple dimensions where the introduction investigated a complete analysis of the global rice market and showcased the complex navigation required for Rice export and the import restrictions in place of the policy variations and market dynamics. The various Risks which primarily revolved around the GM rice and the El Nino effect towards the geopolitics Risk for affecting the rice yield and quality, while market risks included price fluctuations and inflation due to ineffective price monitoring and climate issues. The trade risks were elevated by natural disasters, logistical delays and regulatory variations and bans on certain rice varieties, affecting Rice market flow. Finally, the supply chain risks which constituted by inadequate irrigation practices, poor packaging techniques and climatic conditions disrupting transportation and production for the rice market. These insights suggest a need for robust strategies to manage these risks by enhanced production technologies and ensure a stable and efficient rice market globally for the future to prosper from the rising concerns of consumption pattern.