UNVEILING THE UREA MARKET OF THE AMERICAN CONTINENT

Abstract

Aims: Growing agricultural production and its subsequent demand for fertiliser is a critical element for any country in its export and import ecosystem. In between this, a lucrative market has always been tried to identify many of the agripreneurs in India.

Study Design: The complete research design work was based on secondary data in which relevant data were gathered from ITC HS Code (310210, 310221, 310230), research bulletins, world bank reports and other relevant websites.

Place and Duration of Study: The study was taken as the mandatory summer training course programme of MBA (Agribusiness) which was guided and carry forward by International Agribusiness Management of Anand Agricultural University and XYZ Company Ltd of Ahmedabad jointly, atthe workstation of the later institutes at Ahmedabad itself.

Methodology: South America, North America and Central America are three corner stone of this research work where probable market identification, understanding its agricultural situation and ministry handling its registration process for export of nano urea were done through a conceptualised secondary data collection and analysis process. A total of 22 export market was identified in this study for probable nano urea market for India.

Results: In South America, Uruguay takes the lead with 80.4 percent of its land designated as agriculture while Argentina tops the chart in arable land with 11.9 percent.North America, Mexico stands out with the largest share of agricultural land, comprising 50 percent of its total land area. Venezuela, Chile, Uruguay, and Argentina, impose a 6 percent import tariff, while Brazil (4.8%) opts for a slightly lower than the former. Interestingly, Peru, Bolivia, Ecuador, Colombia, and Paraguay have imposed 0% import tariff, indicating a more open approach to urea imports.

Conclusions: Twelve recommended countries include Peru, Brazil, Chile, Uruguay, Argentina, Suriname, Guatemala, Costa Rica, Nicaragua, Canada, the USA, and Mexico for the export of Nano urea from India.

Keywords: Fertilizer, Urea, Import, Export, Tariff

Introduction:

The world's population is more than three times larger than it was in the mid-twentieth century. It is expected that the global population will add 2 billion which will raise its count from approx. 8 billion to 9.8 billion in 2050 [1]. So, the major concern arises in terms of feeding such a large population which is growing at an enormous rate by producing sufficient food from our limited resources. For fulfilling the demand of the expanding population,India like progressive and developing country are expected to drive up the need for fertilizers demand across the countries and world. According to regional analysis, the Asia-Pacific fertilizer market accounted for $99.13 billion in 2021 and is predicted to grow with a CAGR of 3.76 percent, in the projected timeframe due to rising fertilizer demand across the region[2]. Looking into the probable opportunities, several countries in the region are trying to export agricultural products and inputs like fertiliser to the different countriesand simultaneously todo pace in their economies [2]. Among the fertiliser categories, urea is the leading product which rules over the global market. Top

producing country of urea is India followed by Russia, Indonesia, and Pakistan[3]. As of 2021, urea in Indian agricultural use was 34.2 million tonnes that accounts for 55.60 percent of the world's urea agricultural use. Besides that, the world's total urea agricultural use was estimated at 61.5 million tonnes in 2021 [3].

After India., United States of America has the maximum arable land[4].In South America., Brazil is the largest segment which alone accounts for about 61 percent of the total crop area in the South American region. It accounts for 66 percent of the total domestically used fertilizer in South America[5]. It is also a significant producer of liquid biofuels, relies on energy crops that necessitate fertilizers, particularly nitrogen-based ones, resulting into rising imports and trade imbalances in the chemical sector[6]. According to [7]also highlighted in their work on the physical geography of South America that deforestation, terrain changes, and non-native species introduction impact on agricultural production of the country and future diverse crop production.In other side, Guatemala, Costa Rica, Nicaragua, Honduras, and El Salvador are top five countries in central America that majorly import urea for their agricultural production [8]. Guatemala, Costa Rica, El Salvador, Honduras, and Nicaragua are some of the countries are exporting urea to other countries after their domestic use[8].In North America, the United States and Canada constitute more than 90 percent of the fertilizers market value and volume[9]. Even though North America has phosphate and potash resources, the region is a net importer of more than half nitrogenous and over 85 percent potash from international sources[9]. It was even observed that comprehended agribusiness logistics and the market dynamics of road freight prices also impact on fertiliser consumption in future [10].These sorts of trade anomalies generate business opportunities for the traders both in and outside of the country, and India is also looking intothis to grab advantage in its favour.

With this backdrop, it was tried to understand the agricultural situation of American countries, status of different countries in this market segment, and identifying various ministries handling the registration process for import of fertiliser in American countries.

Materials and Methods

Basically, this study was based on secondary data in which report of International Trade Centre (ITC), published journals, periodicals, different websites sources were taken to understand export and import quantity, value, and unit value of the fertiliser in the international market and probable market identification in the context to trade

in the global forum.ITC HS Code (310210, 310221, 310230) were used in the study for deriving information regarding fertiliser trade to American country from India. To fulfil the specific objectives of the study based on the nature and extent of the availability of data, graphical representation, descriptive statistics (percentage) and tabular analysis were used in this study. A total 22 countries of American country were identified to know the fertilizer market and to know the scope of introducing new fertilizer products in the target countries[1].

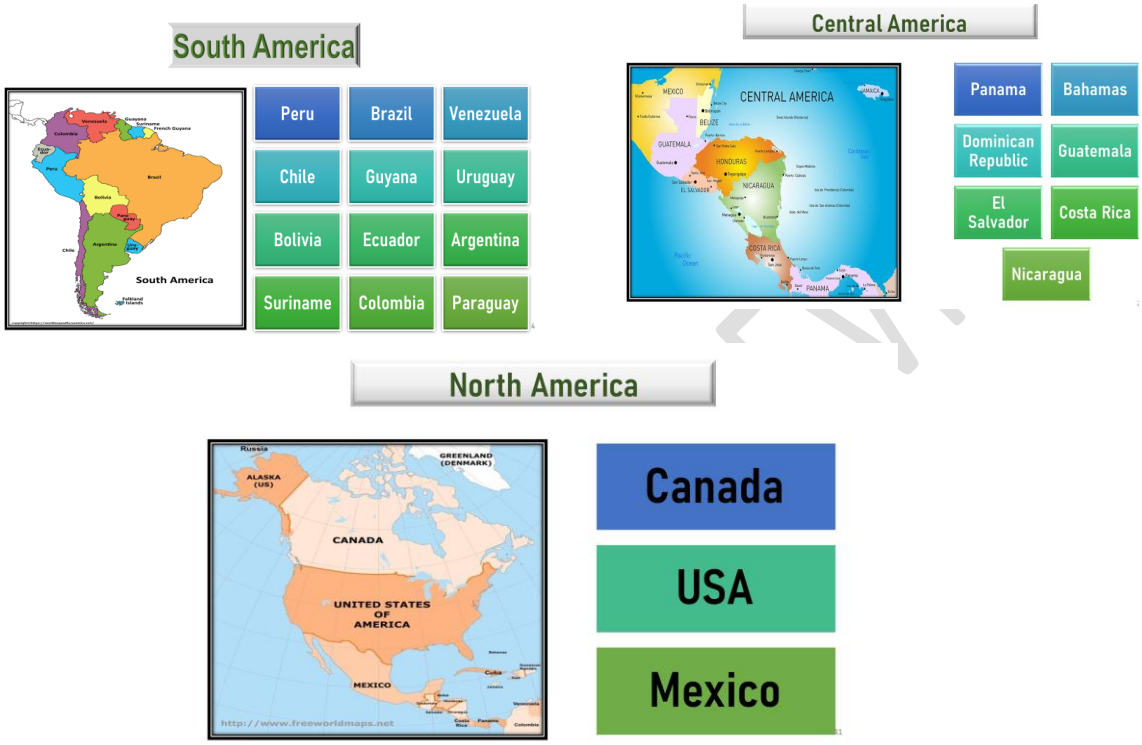

Fig 1 Countries selected for study in the American Continent

Results and Discussion

Agricultural Situations of Different Countries

Major crops grown in these countries are corn, rice, sugarcane, soybean, potato, cotton[11]. Except soybean, which is a leguminous crop, other crops require nitrogen in sufficient amount which could be fulfilled with various nitrogenous fertilizers. It was observed that urea plays a vital role in meeting nitrogen demand of soil. Besides that, climatic condition, and land status also impact on fertiliser consumption of the country.

[1]North America- Canada, United State of America and Mexico
Central America- Panama, Bahamas, Dominican Republic, Guatemala, El Salvador, Costa Rica, Nicaragua
South America- Peru, Brazil, Venezuela, Chile, Guyana, Uruguay, Bolivia, Ecuador, Argentina Suriname, Colombia, Paraguay

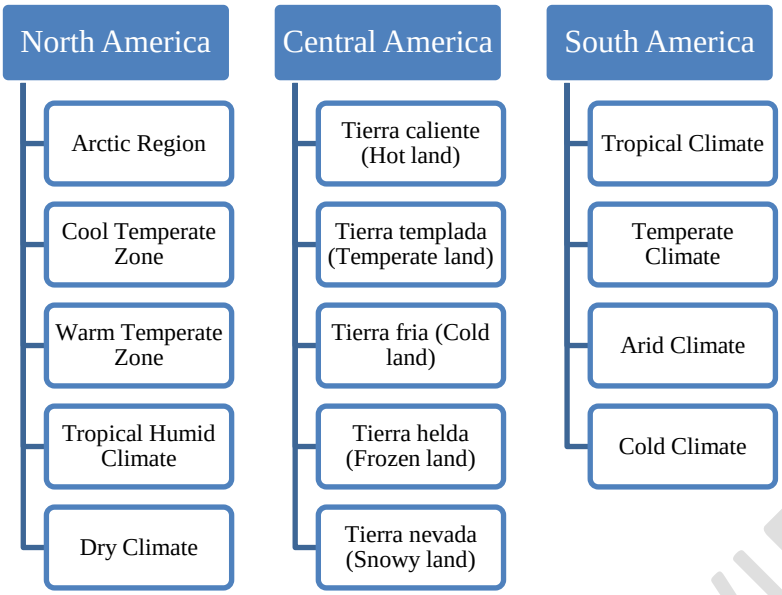

Fig 2 Climatic Condition of the different country in American Continent

Source:[12]

Status of Different Countries in Fertiliser Market Segment

Table 1 presents that in North America, Mexico stands out with the largest share of agricultural land, comprising 50 percent of its total land area. However, the United States leads in arable land, constituting 17 percent of its territory. Canada, despite having the highest landholding size at 323 hectares, faces productivity challenges due to extensive snow coverage[4]. The United States demonstrates the highest fertilizer consumption at 132 kg/ha, reflecting efforts to enhance productivity on potentially infertile lands[13]. Notably, Canada records the maximum consumption of nitrogenous fertilizer, indicating a focus on soil fertility improvement[14].

Twelve recommended countries include Peru, Brazil, Chile, Uruguay, Argentina, Suriname, Guatemala, Costa Rica, Nicaragua, Canada, the USA, and Mexico. This analysis serves as a valuable resource for further research on agriculture and fertilizer sectors in the American continent, offering insights into potential opportunities for Nano urea export to enhance agricultural productivity in the region. Within this region, El Salvador also claims the highest share of arable land at 34.8 percent in the same category. Nicaragua leads in landholding size with 7 hectares, while Costa Rica exhibits the highest fertilizer consumption at 656.5 kg/ha, emphasizing the importance of fertilizers in overcoming potential soil infertility. Costa Rica further tops nitrogenous fertilizer consumption, showcasing a targeted approach to address soil nutrient deficiencies.

In South America, Uruguay takes the lead with 80.4 percent of its land designated as agricultural, while Argentina tops the chart in arable land with 11.9 percent.

Brazil boasts the highest landholding size at 10 hectares, and Chile exhibits the highest fertilizer consumption in the region at 409.7 kg/ha. Within this, Chile places a significant emphasis on nitrogenous fertilizers, underlining strategies to enhance soil fertility in potentially less fertile areas. These regional disparities highlight the diverse approaches to agriculture, land use, and fertility management across North America, Central America, and South America.

Table 1 Land holding status of different country in the American Continent

Country Name	Agricultural Land (% of land area)	Arable Land (% of land area)	Land Holding size (in ha)	Fertilizer Consumption (in Kg /Ha)	Nitrogen Consumption
NORTH AMERICA					
Canada	6.50	4.00	323.00	132.00	80.28
USA	44.40	17.00	180.00	126.20	72.44
Mexico	50.00	10.00	6.80	106.60	61.91
CENTRAL AMERICA					
Panama	29.40	7.00	3.00	77.50	26.89
Bahamas	1.30	0.80	1.20	188.27	92.14
Dominican Republic	51.10	18.20	3.13	196.60	72.76
Guatemala	43.00	8.00	0.60	427.40	103.37
El Salvador	57.70	34.80	1.73	81.00	45.90
Costa Rica	35.50	4.80	3.00	656.50	168.70
Nicaragua	42.30	12.50	7.00	77.00	37.52
SOUTH AMERICA					
Peru	19.83	2.80	2.20	155.50	54.92
Brazil	28.60	6.70	10.00	365.20	93.60
Venezuela	24.40	2.95	3.40	124.80	43.12
Chile	14.25	1.60	1.08	409.70	143.89
Guyana	5.29	2.10	2.00	52.70	37.98
Uruguay	80.40	11.60	3.00	203.10	98.89
Bolivia	35.20	4.20	3.00	10.80	4.72
Ecuador	22.00	4.20	5.00	362.90	83.92
Argentina	43.10	11.90	4.00	71.00	41.55
Suriname	0.50	0.40	1.08	128.20	97.6
Colombia	38.50	4.40	1.20	256.60	60.64
Paraguay	42.30	10.70	2.30	123.40	29.33

Source: [4]

Table 2 Import and Export Status of Fertilizers among countries in American Continent

Countries name	Urea import amount (in tons)	Major Export to country	Major Import from country	Import Tariff (%)	Estimated Untapped import potential (in USD thousand)

NORTH AMERICA					
Canada	5,59,575	USA	USA	0.0	2,68,591
USA	5,34,212	Canada	Qatar	0.0	8,79,169
Mexico	9,61,473	USA	Russia	0.0	2,00.627
CENTRAL AMERICA					
Panama	8,285	Germany	Costa Rica	0.0	7,364
Bahamas	37	--	Greece	0.0	0
Dominican Republic	74,477	USA	Trinidad and Tobago	0.0	26,486
Guatemala	1,38,072	Nicaragua	Russia	0.0	49,793
El Salvador	39,463	Russia	Russia	5.0	12,940
Costa Rica	93,244	Panama	Russia	0.0	24,452
Nicaragua	73,312	--	Russia	0.0	13,072
SOUTH AMERICA					
Peru	3,35,878	Ecuador	Russia	0.0	87,833
Brazil	71,75,471	Paraguay	Oman	4.8	10,03,323
Venezuela	0	Brazil	Brazil	6.0	0
Chile	4,58,143	Uruguay	USA	6.0	1,20,041
Guyana	12,252	Suriname	Trinidad and Tobago	10.0	76,504
Uruguay	3,27,695	Brazil	Nigeria	6.0	34,665
Bolivia	602	Argentina	Peru	0.0	6,077
Ecuador	54,941	Russia	Russia	0.0	71,869
Argentina	8,92,582	--	Nigeria	6.0	1,37,294
Suriname	6,640	--	Trinidad and Tobago	10.0	2,027
Colombia	3,81,439	Peru	Trinidad and Tobago	0.0	1,52,750
Paraguay	55,161	Brazil	Brazil	0.0	16,162

Source: [8]

This table 2 depicts global status of urea in the world, with various countries exhibiting distinct patterns in import and export dynamics. Brazil emerges as a significant player in this scenario, relying heavily on imports to meet its domestic urea requirements, with a staggering 71,75,471 tons procured[2]. Following closely are Mexico and Argentina, importing 9,61,473 tons and 8,92,582 tons, respectively.

[2]Brazil has subliminal production sources where as demand for fertilizer for biofuel industry is growing day by day that impels the country to import it from different countries [6]

These countries not only fulfil their internal demands but also engage in exporting urea to other nations, primarily within the Americas notably, the United States and Canada stand out as key players in both production and export[3]. However, despite their active roles, these countries still engage in significant urea imports, sourcing from global leaders like Russia, Oman, and Qatar, as well as engaging in intracontinental trade with other American nations.

A crucial factor influencing this trade is the tariff landscape. North American countries, including the United States and Canada, impose a 0% import tariff on urea, fostering smoother trade relationships. In Central America, most countries follow suit with a 0% tariff, except for El Salvador, which imposes a 5 percent tariff exclusively for Indian imports.

The situation in South America varies, with Guyana and Suriname imposing the highest tariff at 10 percent in comparison to other countries of the continent. This high tariff is justified by Suriname's lack of involvement in urea exports and Guyana's desire to protect its domestic manufacturing industries. Other countries in the region, such as Venezuela, Chile, Uruguay, and Argentina, impose a 6 percent import tariff, while Brazil (4.8%) opts for a slightly lower than the former. Interestingly, Peru, Bolivia, Ecuador, Colombia, and Paraguay have imposed 0% import tariff, indicating a more open approach to urea imports.

Exploring untapped potential, Brazil again takes the lead with the highest estimated untapped import potential for urea, amounting to USD 10,03,323 thousand. Following closely are the USA, Canada, and Mexico, each presenting substantial untapped import opportunities in the realm of urea, emphasizing the vast potential for further exploration and realization in the global urea trade landscape.

The process of importing goods from one country to another involves a varied landscape of registration requirements, with notable exceptions being Peru, Guatemala, and Canada, where importing fertilizers does not necessitate formal registration. In all other countries, a dedicated agency has been established to oversee and manage the intricacies of the registration process. Each country imposes a distinct timeframe for completing the registration procedure, a task that incurs charges for the exporting company. The nature of this registration process differs across nations, with some opting for a permanent setup, while others enforce a temporary arrangement mandating renewal at specified intervals.

Ministry handing the registration process

Table 3 Ministry handling the registration process in the American Continent

[3] Some of the leading companies are working in these countries (Koch fertilizer) who produce good amount of the fertilser to fulfil the demand.

COUNTRY NAME	REGISTRATION REQUIRED (YES/NO)	MINISTRY HANDLING
NORTH AMERICA		
Canada	No	
USA	Yes	Animal and Plant Health Inspection Services (APHIS)
Mexico	Yes	SEGARPA (Secretariat of Agriculture)
CENTRAL AMERICA		
Panama	Yes	AUPSA (Panamanian Food Safety Authority)
Bahamas	Yes	BAHFSA (Bahamas Agricultural Health and Food Safety Authority)
Guatemala	No	
El Salvador	Yes	MINSAL(Ministerio de SaludPública)
Nicaragua	Yes	General Division of Animal and Plant Health Protection (DGPSA)
Costa Rica	Yes	Ministry of Agriculture And Livestock
SOUTH AMERICA		
Peru	No	
Brazil	Yes	Ministry of Agriculture, Livestock and Supply (MAPA)
Venezuela	Yes	National Institute of Integral Agriculture and Animal Health (Spanish acronym: INSAI)
Chile	Yes	National Custom Service
Guyana	Yes	National Plant Protection Organisation
Uruguay	Yes	MGAP (Ministerio de Ganaderia Agricultura y Pesca) and DGSA (Dirección General de Servicios Agrícolas)
Bolivia	Yes	National Service for Food Safety and Security (SENASAG)
Ecuador	Yes	La Agencia Ecuatoriana de Aseguramiento de Calidad del Agro- Agrocalidad
Argentina	Yes	Servicio Nacional de Sanidad y Calidad Agroalimentaria (SENASA)
Suriname	Yes	Ministry of Agriculture, Animal Husbandry, and Fisheries
Colombia	Yes	Ministry of Trade, Industry and Tourism – MINCOMERCIO
Paraguay	Yes	SENAVE (Servicio Nacional de Calidad y Sanidad Vegetal y de Semillas)

Furthermore, the complexity deepens in certain countries where, in addition to registration, licensing is also a requisite for importation. A separate agency is typically tasked with handling these licensing matters. This dual-layered system emphasizes the multifaceted nature of international trade regulations. The role of the registration process extends beyond a mere bureaucratic formality; it serves as a critical gateway ensuring adherence to import regulations, fostering transparency, and managing the inflow of goods. The agencies involved play a pivotal role in streamlining this process, balancing the need for oversight with the facilitation of international trade. As such, the registration and licensing procedures

collectively constitute a fundamental framework that governs the importation of fertilizers, showcasing the intricate and nuanced nature of global trade dynamics.

Conclusion

North America is geographically diverse, encompassing the mountainous west, Great Plains, Canadian Shield, varied eastern region, and the Caribbean. The USA has the highest arable land, while Canada boasts the largest average landholding. Mexico leads in both urea import and export values, and all North American countries impose a 0% tariff. Canada tops both fertilizer and nitrogen consumption, with the highest untapped estimated import potential.

Central America features five climatic regions, with El Salvador having the highest arable land and Nicaragua the largest average landholding. The Dominican Republic leads in urea import value, while Panama excels in export value. Except for El Salvador's 5% tariff, all countries have a 0% tariff. Costa Rica dominates in fertilizer and nitrogen consumption, with Guatemala having the highest.

South America's four climatic regions include tropical, temperate, arid, and cold climates. Argentina has the highest arable land, and Brazil boasts the largest average landholding. Guyana leads in urea import value, while Chile excels in export value. Most South American countries have a 0% tariff. Brazil is the major urea importer, and Bolivia is a significant exporter. Chile tops in both fertilizer and nitrogen consumption, with Brazil having the highest untapped estimated import potential.

Considering parameters like agricultural land, arable land, fertilizer consumption, and import/export patterns, potential export markets for Nano urea include Peru, Brazil, Chile, Uruguay, Argentina, Suriname, Guatemala, Costa Rica, Nicaragua, Canada, the USA, and Mexico. These countries exhibit favorable conditions based on soil types, climatic conditions, and cropping patterns.

Recommendation

Peru, Brazil, Chile, Uruguay, Argentina, & Suriname of South America, Guatemala, Costa Rica, & Nicaragua of Central America followed by Canada, USA, & Mexico of North America may be considered as the potential market of Urea for the Indian entrepreneurs.

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