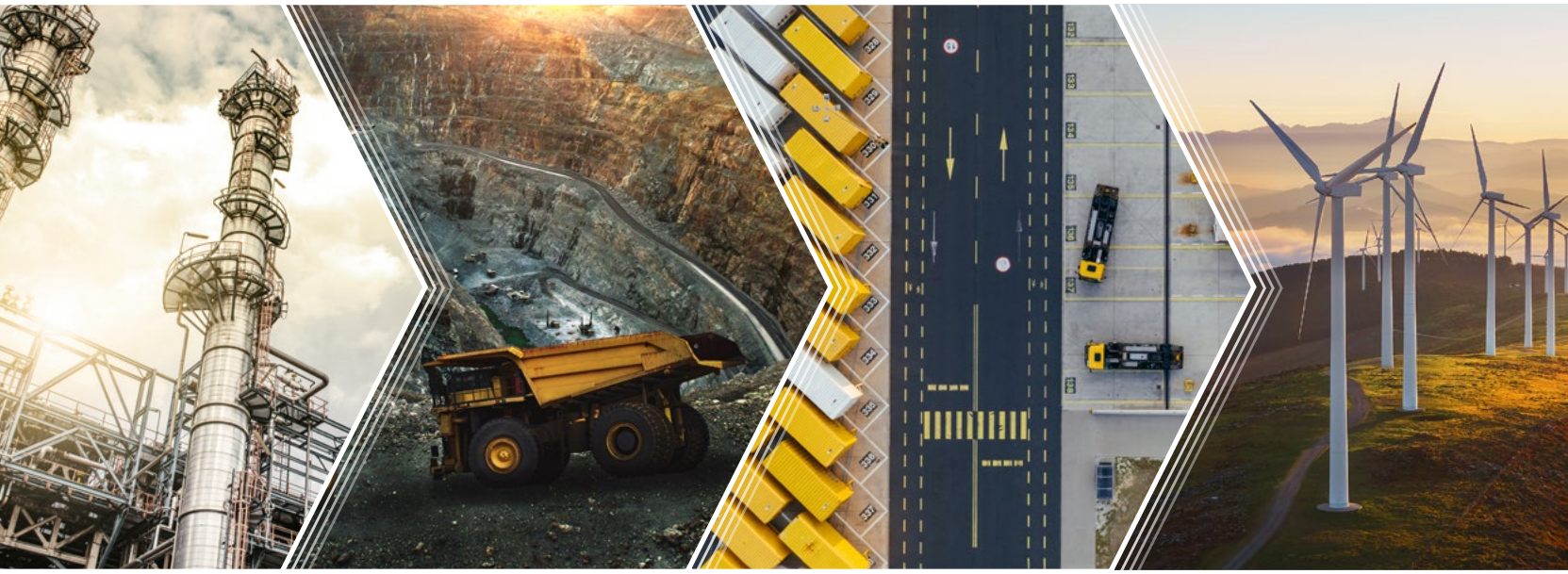
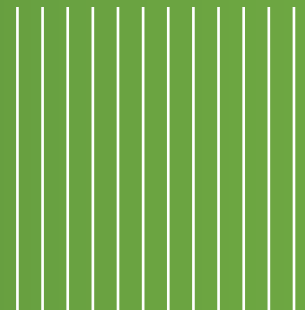


50  
YEARS عام

SIDF  
صندوق التنمية الصناعية السعودي



# Annual Report 2022



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



In the upcoming years, we can expect significant accomplishments that aim to enhance the industrial and service sectors within the national economy.

Custodian of the Two Holy Mosques

**King Salman bin Abdulaziz Al Saud**

May Allah protect him



Together we can join forces to forge a stronger nation, ensuring our shared aspirations of a thriving future. This will unlock exceptional talents, untapped potential, and unwavering dedication present in our youth, as we strive towards prosperity.

His Royal Highness Prince

**Mohammed bin Salman bin Abdulaziz Al Saud**

Crown Prince, Prime Minister

May Allah protect him

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# 01

## About SIDF



## SIDF Overview

The Saudi Industrial Development Fund (SIDF) was established in 1974 with an initial capital of SAR 500 million, aiming at providing financial support to the industrial sector in Saudi Arabia. Over the span of 48 years, SIDF gradually increased its capital to SAR 105 billion by 2019. Throughout its existence, SIDF has adapted its support to evolving needs of the industrial sector, by encouraging investment opportunities, promoting local industry development, enhancing performance, fostering competition, and backing strategic initiatives. Moreover, SIDF has expanded its support to include promising sectors such as industry, energy, mining, and logistics, playing a vital role in the industrial transformation of Saudi Arabia. In 2021, SIDF successfully relocated to its new headquarters in the King Abdullah Financial District (KAFD) in Riyadh, symbolizing a new chapter focused on bolstering confidence in the development and growth of the national economy.

SIDF efficiently operates to deliver both financial and advisory assistance, as well as inventive solutions, to foster the growth and advancement of the local industry and improve its overall performance. This is done with the aim of accomplishing the following strategic objectives:



Enhancing effectiveness and productivity of enterprises while promoting sustainability, aiming to improve their efficiency and performance.



Supporting local products



Enhancing non-oil exports.



Establishing seamless integration between the industrial sector and other sectors towards a cohesive and interconnected system.



Maximizing involvement of skilled Saudi individuals in the industrial sector, actively promoting their participation and contribution.



Efficiently utilizing indigenous raw materials to their fullest potential.



Catalyzing FDI and transferring and localizing technology



Promoting the culture of industrial safety and prevention against risks in industrial facilities



Promoting environmental awareness in the industrial sector

# SIDF Capital Growth

**105** 2019  
SAR billion

**65** 2017  
SAR billion

**40** 2012  
SAR billion

**20** 2005  
SAR billion

**7** 1992  
SAR billion

**3** 1975  
SAR billion

**0.5** 1974  
SAR billion



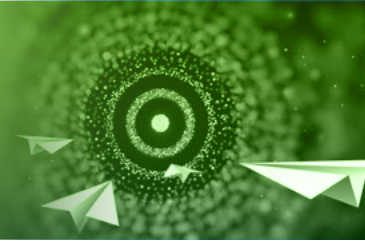
## Vision

Industrial development fund enabling Saudi Arabia’s transformation to become an industrial powerhouse and a global logistics hub.



## Mission

Enhance ecosystem competitiveness and investments attractiveness by providing financial and non-financial offerings.



## Values



### Customer Success

We actively promote our customers’ success as their prosperity directly impacts our own.



### Empowerment

We strive to empower individuals, foster collaboration, and deliver exceptional results with utmost efficiency.



### Cooperation

As a team, our collective mission is to contribute towards the growth and prosperity of our beloved country.



### Development

Development serves as the core focus of our endeavors, fueling our drive and passion in all our undertakings.



### Reliability

Rest assured of our unwavering dependability and sound judgment when it comes to fulfilling entrusted tasks and making decisions.



## Board of Directors

Functions of SIDF Board of Directors, comprising a chairperson and five members, encompass a variety of responsibilities, including:

- ✓ Setting SIDF's general policies
- ✓ Approving strategies, plans, and programs before implementation phase.
- ✓ Overseeing administrative, financial, and technical regulations and procedures.
- ✓ Approving lending and financing activities, as well as authorizing the ownership, sale, and mortgage of property, in addition to overseeing finalization of agreements and contracts, ensuring adherence to relevant legal procedures.
- ✓ Performing various additional functions and duties to consistently achieve the goals and objectives of SIDF, ensuring they are fulfilled in a systematic manner.

## Board Members



**H.E. Mr.  
Bandar bin Ibrahim Alkhorayef**

Minister of Industry and Mineral Resources  
Chairman of the Board of Directors



**H.E. Eng. Saleh bin Nasser Al-Jasser**

Minister of Transport and Logistic Services  
Member



**H.E. Dr. Ghassan bin Abdulrahman Al-Shibl**

Advisor to the General Secretariat of  
the Council of Ministers  
Member



**Dr. Stephen Grove**

Governor of National Development Fund  
Member



**Dr. Abdullah bin Abdulrahman Alnamlah**

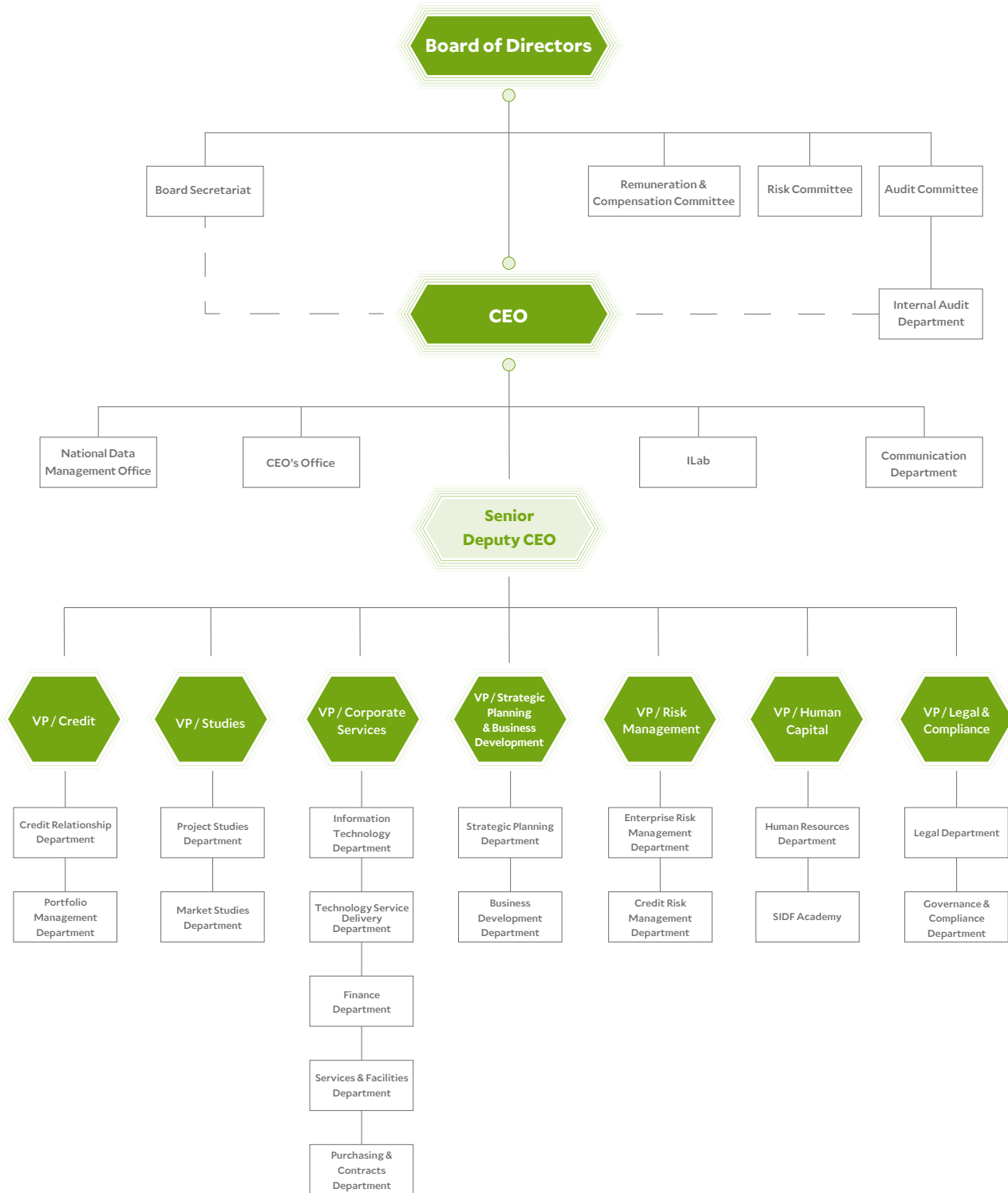
Minister of Finance Advisor  
Member



**Eng. Ayman bin Ishaq Afghani**

Deputy Minister of Economy and Planning for Labour  
Affairs and Human Capital Development  
Member

# Organizational Structure





## Chairman's Message

Over 48 years, the Saudi Industrial Development Fund (SIDF) has played a pioneering role in formulation and execution of industrial development policies and programs. As the main financial facilitator for Kingdom's industrial transformation and sectors of the National Industrial Development and Logistics Program (NIDLP), SIDF diligently fulfills its national obligations. It consistently delivers outstanding results while adapting to remarkable transformations, aligning with the goals of Vision 2030 and NIDLP initiatives. These initiatives aim to position the Kingdom as a prominent industrial nation and a key global logistics hub.

**14.2**

**SAR billion**  
the approved  
loans value  
during 2022

As part of its efforts to contribute towards national objectives, SIDF strategy has broadened its scope to extend support to various promising sectors such as industry, energy, mining, and logistics. In 2022, the SIDF continued its lending operations by granting approval for 111 loans, surpassing a total value of SAR 14 billion. This represents an increase from the SAR 11.1 billion approved in 2021. Moreover, loans were aimed at financing new expansion projects in crucial sectors located across different provinces throughout the Kingdom as the industrial sector received the largest portion of the loans, with 102 loans amounting to over SAR 13 billion.

**13**

**Cooperation  
& Partnership  
Agreements**  
for the  
improvement  
of developers

To bolster its commitment to the Kingdom's role and global leadership in the green hydrogen economy, SIDF intensified its support by entering into an agreement in the previous year to provide financing for the largest hydrogen/ammonia complex worldwide. This initiative aligns with the vision and objectives of the "Saudi Green" initiative. Additionally, as part of its strategy to empower promising sectors and promote economic diversification, SIDF gave its approval to fund a project focusing on electric vehicle manufacturing.

SIDF has taken significant steps to facilitate and empower the private sector through its investment and advisory support. In collaboration with the public and private sectors, SIDF has introduced various products, programs, and services aimed at enhancing the projects of industrial investors in the sectors it funds. Noteworthy initiatives include the establishment of the SIDF Investment Company and the introduction of advisory services such as "Manufacturing Efficiency Improvement." Moreover, SIDF, in partnership with "Munsha'at," launched the "Tomoh" industrial pathway. Additionally, 13 cooperation and partnership agreements were signed to establish a resilient national industrial economy capable of adapting to changing circumstances.

SIDF remains committed to fostering effective communication with its clients through diverse channels and initiatives. Their aim is to improve quality of communication between executive bodies and investors, ensuring that the industrial ecosystem is closely aligned with investor needs. To this end, SIDF actively participated in the second edition of the "Dali" training program, led by the National Industry Development and

Logistics Program. This participation played a significant role in strengthening SIDF's ability to support clients, enabling them to take full advantage of the opportunities it provides while overcoming any obstacles or challenges they might encounter.

For the third year in a row, SIDF has maintained its outstanding position as the top public sector organization with the best working environment throughout the Kingdom. This achievement can be attributed to SIDF's advanced and inspiring workplace environment, which has led to a workplace environment quality indicator of 82%. This recognition has been further solidified by SIDF being awarded the prestigious Gold Level in the King Abdulaziz Quality Award. This esteemed recognition acknowledges the significant contributions made by SIDF over the span of almost five decades in empowering the national industry and fostering a culture of institutional excellence.

From its inception to the present day, SIDF has consistently prioritized the investment in its human resources, striving to enhance their capabilities and skills. This commitment to human capital development continued in 2022, with the allocation of 29 scholarships, including 10 prestigious scholarships in the world's top 10 universities. Additionally, a total of 701 employees actively participated in various training courses, supported by the valuable knowledge-sharing platform of the SIDF Academy. This initiative proved beneficial as it reached 8,188 trainees, comprising both employees within the manufacturing ecosystem and SIDF clients, throughout the previous year.

I would like to express my heartfelt gratitude and appreciation to King Salman bin Abdulaziz Al Saud, the Custodian of the Two Holy Mosques, and to His Royal Highness Prince Mohammed bin Salman, the Crown Prince and Prime Minister, for their unwavering commitment and continuous support towards the industrial ecosystem. Their wise guidance has been instrumental in enabling SIDF to fulfill its role as a financial enabler. I would also like to extend my thanks to the Board of Directors and all my SIDF colleagues for their dedicated efforts, which have played a pivotal role in our notable achievements.

**Bandar bin Ibrahim Alkhorayef**

Minister of Industry and Mineral Resources



**King  
Abdulaziz  
Quality  
Award**

SIDF achieved  
the Gold Level  
of the award

**8188**

**trainees**  
from the  
employees  
of the  
manufacturing  
ecosystem and  
SIDF clients



## CEO's Message



111

**loans**

number of approved loans during 2022 with a value of SAR 14.2 billion

82%

workplace environment quality indicator

37

**academic programs**

in cooperation with 16 training entities, benefiting over 8188 trainees

In 2022, the Saudi Industrial Development Fund (SIDF) remained at the forefront of driving growth and enhancing the efficiency of the industrial, logistics, energy, and mining sectors. During the fiscal year, SIDF approved loans amounting to SAR 14.2 billion, marking a notable 28% increase compared to the previous year, to support both new projects and expansions. The outstanding performance of SIDF's lending activities continued, with a total of 111 loans granted, representing a substantial investment value of SAR 46.2 billion. Notably, SAR 6.4 billion was successfully repaid, while SAR 6.3 billion was disbursed. Of the approved loans, 78% were allocated to small and medium-sized projects, consisting of 87 loans worth SAR 1.1 billion. Furthermore, SAR 11.3 billion was specifically allocated to promising regions and cities, supported by 40 loans.

In 2022, the primary goals of SIDF revolved around specific strategic objectives. These objectives included boosting the economic influence of the projects funded by SIDF, stimulating investments in national priorities, ensuring financial stability, and striving for excellence in customer service while enhancing the work environment.

For three years in a row, SIDF has received prestigious recognition as the top public sector organization in the Kingdom for its exceptional work environment. This achievement is attributed to its advanced system that fosters the development of its staff, leading to a workplace environment quality indicator of

82%. Additionally, SIDF's successful journey in digital transformation played a significant role in earning the prestigious King Abdulaziz Quality Award, specifically at the Gold Level. This award recognized SIDF's continuous efforts and valuable contributions since its inception.

The SIDF Academy has played a significant role in effectively training and nurturing local talents. It has successfully offered 37 academic programs through partnerships with 16 renowned training and educational institutions. These programs have benefitted a total of 8,188 trainees from more than 300 public and private sector organizations, including 7 programs specifically designed for "Nokhab" trainees. Furthermore, around 20 seminars covering a wide range of financial, industrial, and economic topics have been conducted.

In conclusion, the remarkable progress and accomplishments of SIDF would not have been possible without the invaluable support of our wise leaders. I would like to express my sincere gratitude and appreciation to King Salman bin Abdulaziz, the Custodian of the Two Holy Mosques, and Crown Prince Mohammed bin Salman - may they be protected by God. Their unwavering support has been instrumental in realizing the objectives of Vision 2030 and elevating our beloved country among the leading industrial nations. I would also like to extend my thanks to the Chairman, members of the Board of Directors, and my esteemed colleagues at the Saudi Industrial Development Fund for their dedicated and tireless efforts in this regard.

**Sultan bin Khalid Al Saud**

Chief Executive Officer  
Saudi Industrial Development Fund



# 02

## 2022 Highlights

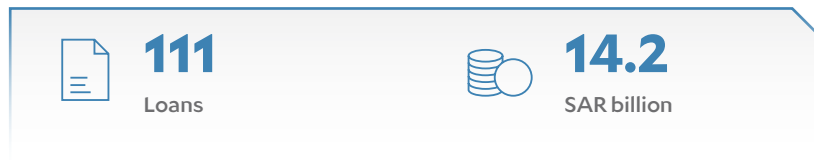


# 2022 Highlights

During 2022, SIDF made considerable strides in its performance, evidenced by a range of compelling facts and figures that demonstrate its achievements and significant contributions in various crucial areas. The following notable highlights encapsulate its noteworthy accomplishments:

## First: Lending Activity

### Total approved loans



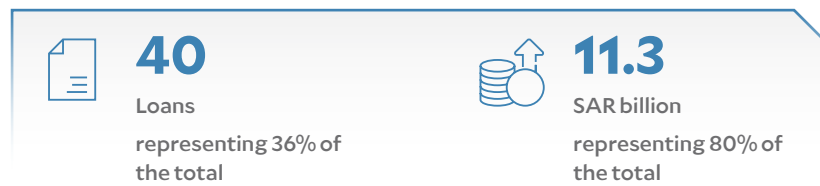
### Disbursed amounts



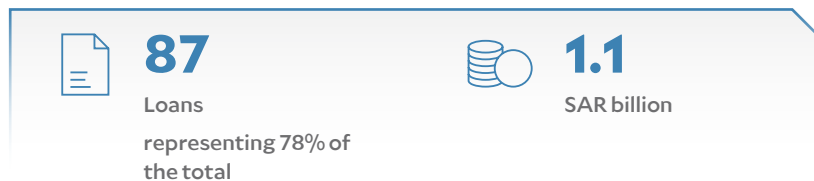
### Repaid amounts



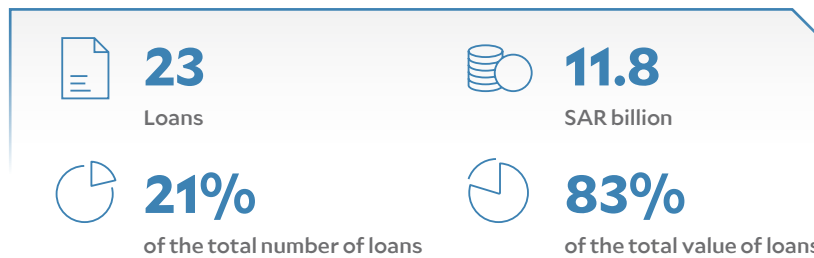
### Loans for promising regions and cities



### Small and Medium Projects

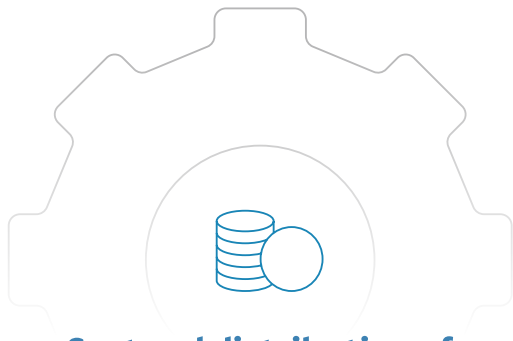


### Foreign and Joint Projects

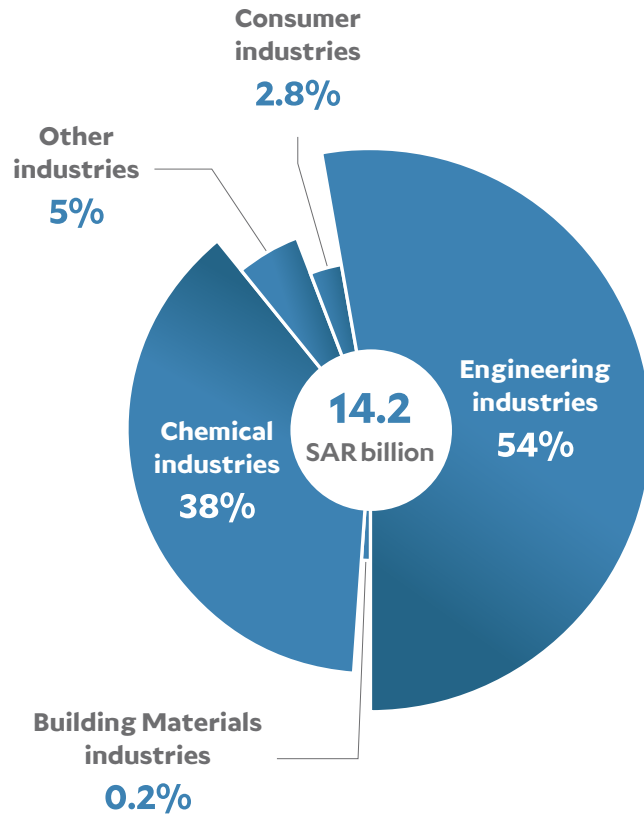


### Projects started production during 2022

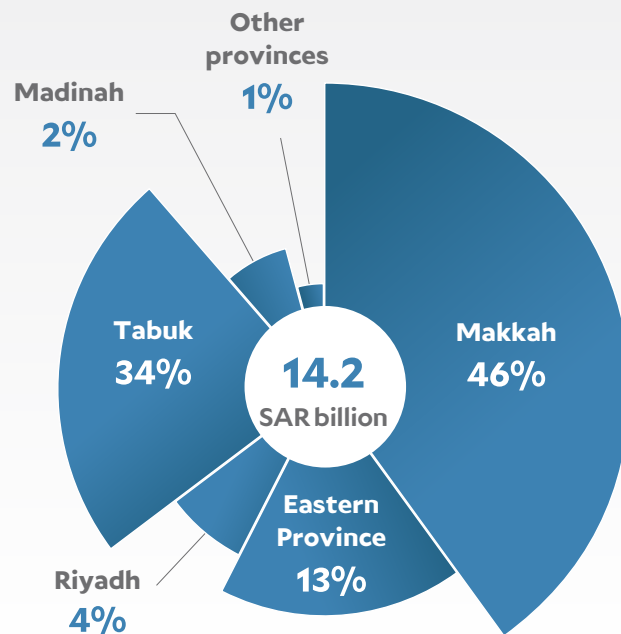




**Sectoral distribution of approved loans value during 2022**



**Geographical distribution of approved loans value during 2022**



## Second: Financing Programs and Products during 2022

### Financing Programs:

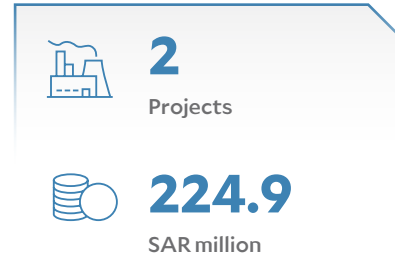
#### Tanafusiya Program



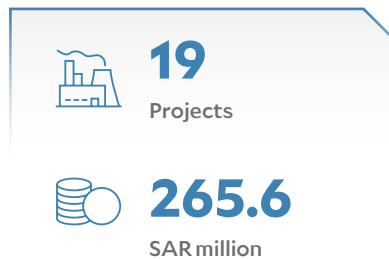
#### Tawteen Program



#### Mutajadedda Program

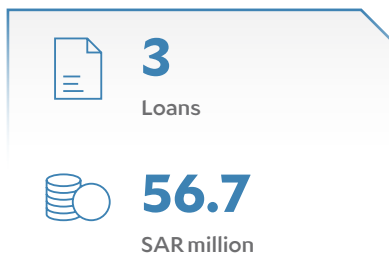


#### Afaq Program

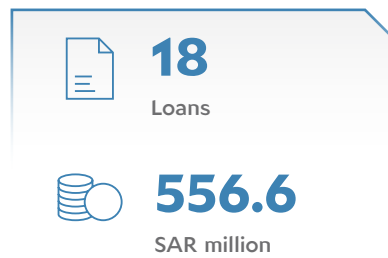


### Financing Products:

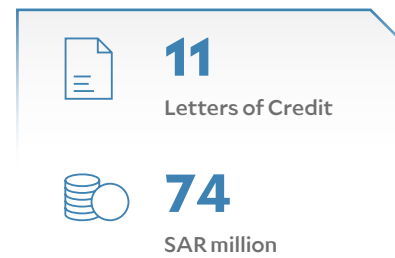
#### Multipurpose Financing



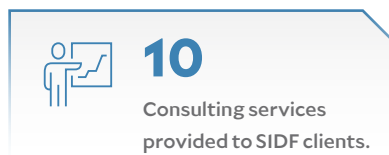
#### Working Capital



#### Letter of Credit with local banks

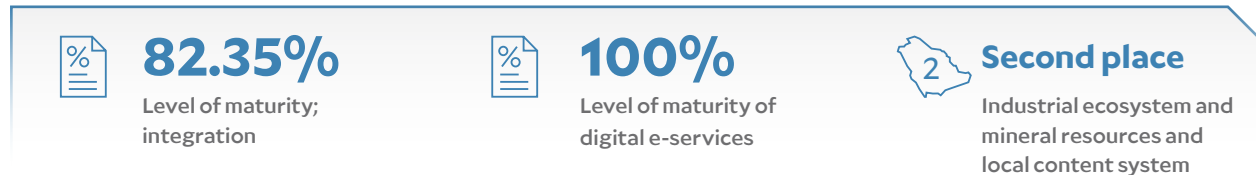


### Consulting services



## Third: Digital transformation

### The Tenth Measurement of Digital Transformation

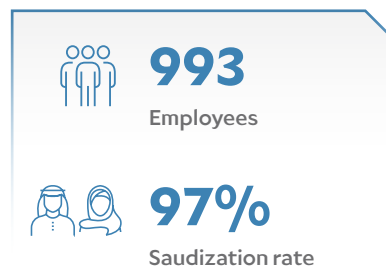


## Fourth: Development of human capital

### SIDF Academy



### SIDF Employees



### Talent Attraction

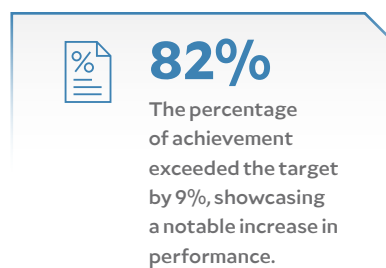


## Fifth: Other Figures

### Client Satisfaction Indicator



### Job Engagement Indicator

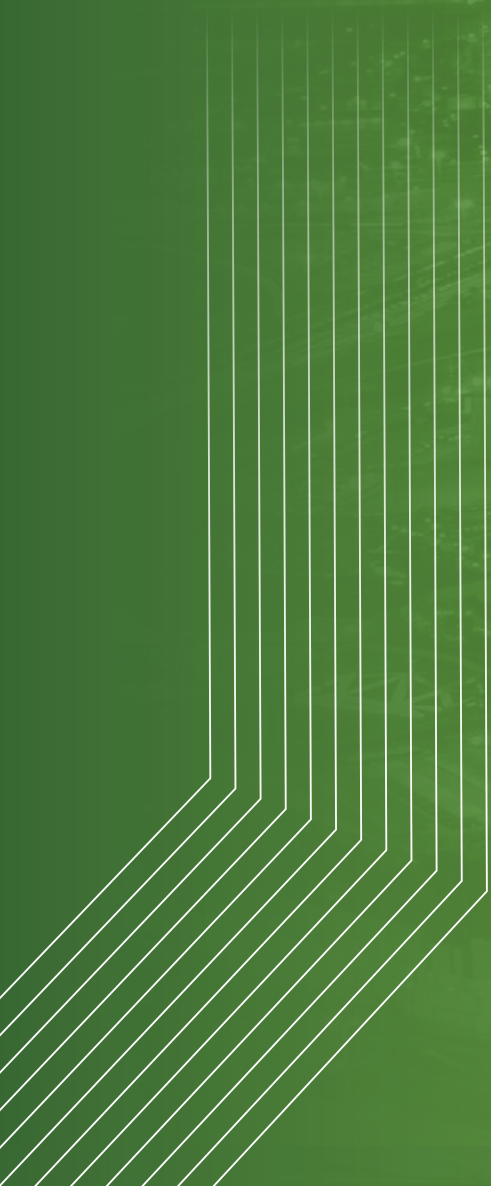


### Knowledge Department



# 03

## Trends & Indicators of National Economy





## The Economic Position of the Kingdom during 2022



**The Kingdom is among the top G20 countries in achieving growth rates during 2022**

During 2022, global economy encountered significant difficulties arising from multiple factors. Political tensions in various countries contributed to a decrease in economic activities. Moreover, higher energy prices and inflation rates led to more stringent financial and monetary conditions across different economies. The lingering effects of the COVID-19 crisis also continued to impact the global economy. According to the International Monetary Fund, there was an estimated 3.2% deceleration in global economic growth in 2022 compared to the previous year.

Despite the global economic challenges, the local economy experienced a robust recovery in terms of

economic activities. The Kingdom's Gross Domestic Product (GDP) demonstrated one of the highest growth rates among G20 countries in 2022. This success can be attributed to the prompt response to the COVID-19 crisis since its outbreak. The Kingdom's implementation of economic reform policies, combined with support from public finance and favorable oil prices throughout the year, played a crucial role in achieving this growth. These factors enabled effective control of global inflation rates and mitigated the impact of political crises on the local economy. These crises had adverse effects on production levels, prices in sectors like food and energy, and caused

# 8.7%

growth in the Gross Domestic Product (GDP) in the Kingdom

## The non-oil sector

contribution to the GDP increased to 57%

disruptions in global supply chains. Based on estimates by the General Authority for Statistics (GASTAT), the real GDP experienced a growth rate of 8.7% compared to the previous year, amounting to SAR 2.975 trillion at constant prices. This growth can be attributed to various factors, including structural and economic reforms, fiscal policies, and measures aimed at promoting local economic growth, stability, and sustainability. Efforts were made to develop non-oil revenues, enhance expenditure efficiency, and strengthen the role of the private sector in the local economy.

In 2022, the average prices of the OPEC basket saw a substantial increase of approximately 43% compared to the previous year. Within the oil sector, there was a notable growth of 15% compared to 2021, while the non-oil sector experienced a growth rate of 5% at constant prices. The non-oil sector accounted for around 57% of the gross domestic product (GDP) in 2022. The expansion of key economic activities played a significant role in driving this growth. Notably, other manufacturing industries grew by 8%, mining and quarrying activities by 7%, wholesale and retail trade, restaurants, and hotels by 5%, construction and building activities by 4%, financial, insurance, real estate, and business services by 3%, and electricity, gas, and water activities by 2%.

In accordance with data of the General Authority for Statistics (GASTAT), the Consumer Price Index for 2022 increased by 107 points, and annual increase of 2.5% compared to 2021, mainly influenced by the rise in food and beverage prices. In addition to the increase of prices of restaurants, hotels and transport. It is noteworthy

that the Saudi inflation rate is one of the lowest global rates in the midst of increases witnessed worldwide due to geopolitical repercussions and economic circumstances, besides the followed economic policies have reduced the impact of the global inflation on the local economy, in respect of many essential economic activities.

Preliminary estimates from the Saudi Central Bank (SAMA) indicate that the current account of the payment balance showed a surplus of SAR 565 billion by the end of 2022, which is a significant increase compared to the SAR 166 billion surplus recorded for the same period in 2021. Additionally, the commercial balance also saw a surplus of SAR 829.9 billion by the end of 2022, showing a growth of approximately 79%. This increase was driven by the value of exported goods, which reached SAR 1,541 billion in 2022. The surge in oil exports, specifically, contributed to this growth, with a 62% increase to SAR 1,226 billion. Furthermore, non-oil exports saw a 14% increase compared to 2021, amounting to approximately SAR 315.6 billion. On the other hand, the value of imported goods in 2022 rose by 24% compared to 2021, reaching around SAR 712 billion.

In view of the financial and monetary developments influenced by both domestic and global economic changes, financial and monetary policies continue to take appropriate actions to ensure a sufficient level of liquidity that meets the needs of the local economy. Furthermore, the recent budget figures for 2022 have portrayed optimistic outcomes that strengthen financial stability. Through economic reforms and proactive measures to address global economic fluctuations, the Kingdom





# 103.8

## SAR billion

A surplus in the Kingdom budget

has bolstered its financial position, expanded revenue sources, and achieved positive outcomes on the local economic front. Specifically, revenues have surged by 31% to SAR 1,268 billion compared to the previous year. Compared to 2021, revenues in 2022 have seen a significant increase of 31% to reach SAR 1,268 billion. Additionally, expenses have also risen by 12% to SAR 1,164 billion. This marks the first surplus of SAR 103.8 billion in the Kingdom's budget since 2013, showcasing the commitment to fine-tune financial stability and achieve a balanced financial position as outlined in Vision 2030. Moreover, the public debt level has reached a close level of 24.9%. These positive results are a result of the Kingdom's efforts in implementing measures to support the financial and economic sectors, with the aim of improving financial

sustainability, implementing economic and structural reforms to drive economic growth, empowering the private sector, optimizing expenditure efficiency, and mitigating anticipated economic shocks. In 2022, the broad money supply (M3) in Saudi Arabia increased by 8% compared to 2021, reaching SAR 2,495 billion by the end of the year. However, when we consider the different components of money supply (M3), there was a decrease of 2.3% in narrow money supply (M1) compared to 2021. On the other hand, money supply (M2) experienced an annual increase of 6% compared to the previous year.

By the end of 2022, the capital and reserves of commercial banks in Saudi Arabia grew by 4% to approximately SAR 437.7 billion. Additionally, the total liabilities of these banks from

# 9%

annual increase of bank deposits compared to 2021

# 111

approved loans in 2022

# 14.2

SAR billion

value of approved loans in 2022

both the public and private sectors increased by 12% to SAR 2,927 billion during the same year. Moreover, there was a 9% annual growth in bank deposits compared to the level of 2021. In 2022, commercial banks played a significant role in supporting various economic activities by providing a total credit of approximately 2,349 billion riyals to the private sector. This amount represents a 14% increase compared to the previous year. Analyzing the credit distribution among sub-activities, it is evident that most economic sectors witnessed an increase in bank financing. The real estate sector experienced the highest growth of 31%, followed by the mining sector with 22%, and the finance and insurance sector with 20%. On the other hand, the transportation and storage sector saw a reduction of 8% in financing, while the agriculture, forestry, and fishing sector experienced a decrease of 2%.

In 2022, the Saudi Industrial Development Fund (SIDF) introduced a series of initiatives aimed at encouraging industrial projects. The strategic focus of SIDF also expanded to align with the national objectives of the Kingdom. This involved increasing support for various sectors such as industry, energy, mining, and logistics services, which showed great potential for growth. Additionally, SIDF continued its lending activity by approving 111 loans worth SAR 14.2 billion during the same year. This was a significant increase compared to SAR 11.1 billion in 2021. The approved loans were dedicated to financing new expansion projects in vital sectors across 10 regions of the Kingdom. Notably, the industrial sector received the largest share of the loans, consisting of 102 loans exceeding SAR 13 billion.

In contrast, the Saudi Stock Exchange experienced a decline in 2022 with the general index decreasing by 7%. By the end of the year, it reached a level of 10,478 points, compared to 11,281 points at the end of 2021. This marked the first annual decrease since 2015. The total value of shares traded during 2022 was approximately SAR 1,708 billion, showing a significant drop of 24% compared to SAR 2,235 billion in 2021. Additionally, the market values of shares issued amounted to around SAR 9,878 billion, experiencing a decrease of approximately 1.3% compared to the previous year.

In the course of the reporting year, the Saudi Stock Exchange observed an increase in financing options and growth prospects for companies, along with a rise in investment avenues. Seventeen new companies representing various sectors such as food production and retail, essential materials, applications and technical services, banks, real estate management and development, consumption services, energy, public utilities, traded real estate funds, and capital goods were added to the market. As a result, the total number of listed companies reached 223 by the end of the year. The collective market value of these companies stood at approximately SAR 147 billion, accounting for around 1.5% of the overall market value.

Notably, in 2022, the Saudi Exchange "Tadawul" witnessed the first dual and simultaneous listing with the Abu Dhabi Securities Market "ADX". Meanwhile, the parallel market index (Nomu) experienced a 25% year-on-year decline, closing at 19,417 points compared to 25,975 points in 2021.

## وطن بصنعم

Launching the National Strategy  
for Industry



Initiating the Special Integrated  
Zone in Riyadh



THE LINE

Announcing designs of the Line  
City in NEOM



Trojena the global destination for  
mountain tourism in NEOM

## KSIA

Launching the master plan  
for King Salman International  
Airport

In order to enhance the financial market's role in the Saudi economy, several measures were implemented in 2022. These included implementing various improvements to develop and enhance the efficiency of the infrastructure for the post-trading phase. Additionally, future contracts of single shares were introduced, and market procedures and industry regulations were approved. These initiatives aimed to promote liquidity and improve price identification, thereby increasing the overall effectiveness of the market.

According to the 2022 annual report by the International Institute for Management Development (IMD) on global competitive indicators in financial markets, the Kingdom of Saudi Arabia performed well in the indicators included in the report. The Kingdom's ranking improved in nine out of the twelve financial market indicators and maintained its position in the remaining three indicators compared to 2021.

In 2022, several significant reforms were implemented in the Kingdom of Saudi Arabia, particularly in the realm of structural and organizational enhancements aimed at fortifying the economy's framework. Notable reforms included the passage of several laws such as the Small and Medium Enterprises Bank Law, Personal Status Law, Telecommunications and Information Technology Act, Companies Law, Energy Supply Law, Real Estate Brokerage Law, and Commercial Processors of International Trade Law. Additionally, the establishment of the Supreme Space Council and the renaming of the Communications and Information Technology Commission to the Communications, Space, and Technology Commission took place.

Furthermore, two authorities were created to drive the development of the Al-Taif and Al-Ahsa governorates. The year 2022 also witnessed the launch of various national strategies, encompassing areas such as industry, intellectual property, the Custodian of the Two Holy Mosques Scholarship Program, as well as the National E-Gaming and Sports Strategy. In 2022, significant developments took place in the Kingdom of Saudi Arabia. These included the unveiling of the master plan for King Salman International Airport in Riyadh, the initiation of the Special Integrated Logistics Zone in Riyadh, the establishment of the Saudi Downtown Company to foster the creation and development of urban centers across the country. Additionally, the announcement of "Trojena" as a premier global destination for mountain tourism in NEOM and the introduction of the Boutique Group dedicated to luxury hotel hospitality were notable highlights. Furthermore, the unveiling of designs for the Line City in NEOM showcased the country's commitment to innovation and urban planning. In terms of climate action, three new projects were announced, showcasing the Kingdom's dedication to addressing environmental challenges. Moreover, as part of the program to attract regional headquarters for companies, six international companies received licenses to establish their regional headquarters and conduct operations within the Kingdom. Lastly, in 2022, the Kingdom submitted a bid to host Expo 2030 in Riyadh, further demonstrating its ambition to serve as a global hub for exhibitions and events.

The Saudi economy has received accolades from various global economic institutions. The International



**IMF indicated the Kingdom's progress in expanding its economy through the manufacturing and service sectors**

Monetary Fund (IMF) has praised the Kingdom's robust local economy, disciplined financial situation, and its strong recovery following the recession caused by the COVID-19 pandemic. The IMF holds positive short and medium-term expectations for the Saudi economy, citing its ability to sustain the ongoing recovery, effectively manage inflation, implement structural reforms, and strengthen its international economic standing. The IMF also acknowledged the positive impact of liquidity and public finance programs on the economy. Furthermore, the performance of the oil sector has improved due to rising oil prices, and the non-oil sector has experienced growth, particularly in manufacturing, retail, and trade.

These factors have contributed to the overall revival of the Saudi economy and mitigated the impacts of geopolitical challenges worldwide. The IMF also highlighted the decline in unemployment rates in Saudi Arabia, attributing it to increased employment opportunities in the private sector and the higher participation of women in the workforce. Additionally, the Kingdom has demonstrated its commitment to addressing climate change through policies aimed at boosting investment in green and blue hydrogen production, reducing carbon emissions, and advancing the Saudi Green Initiative. The IMF commended Saudi Arabia's progress in diversifying its economy through the growth of sectors such as manufacturing and services, including travel and tourism. These efforts align with the goals of Vision 2030 and are being supported by economic and structural reforms implemented through various Vision realization programs.

Despite the challenging global conditions, Saudi Arabia maintains a strong global credit rating. In September 2022, S&P assigned the Kingdom a

rating of (A-/A-2) with a positive outlook. This assessment takes into account factors such as robust GDP growth, effective financial policies, and the Kingdom's ability to navigate the impacts of the COVID-19 pandemic. The growth of the non-oil economy has also contributed to the positive financial and external indicators of Saudi Arabia. Similarly, in April 2022, Fitch gave the Kingdom an A rating with a positive outlook, specifically highlighting the potential for further growth in Saudi Arabia's general budget. Additionally, there has been an increase in oil revenues, and efforts are being made to manage financial circumstances effectively. Moody's, in June 2022, assigned the Kingdom an A1 rating with a stable outlook, indicating a commitment to fiscal control and long-term sustainability of public finances. The government's ongoing development of fiscal policy, responsiveness, and management of changing oil prices are key factors contributing to this positive assessment.

Despite the global struggles caused by the pandemic and various political situations, the Kingdom of Saudi Arabia has managed to overcome most of the challenges that could have hindered economic development. This success can be attributed to the government's swift and determined response in implementing economic reforms that have enhanced the economy's flexibility and adaptability to potential changes. The Kingdom is expected to continue pursuing structural and economic transformations to further strengthen its economy across all sectors. The economic growth witnessed in 2022 highlights the Kingdom's ongoing efforts to maintain a robust and sustainable economy, ensuring steady growth and sustainability in all economic sectors.

**Fitch  
Ratings**

**S&P Global  
Ratings**

**Despite the world's exceptional circumstances, the Kingdom has a distinct credit rating at the international level**

The background image shows a complex industrial facility, likely a refinery or chemical plant, with numerous pipes, scaffolding, and a tall distillation column. The entire scene is overlaid with a semi-transparent blue filter. A white network diagram with circular nodes and connecting lines is superimposed on the upper right portion of the image. In the bottom left corner, there are several white, parallel lines that curve upwards and to the right, resembling a stylized circuit board or data flow path.

# 04

## SIDF Lending Activity



## SIDF Lending Activity

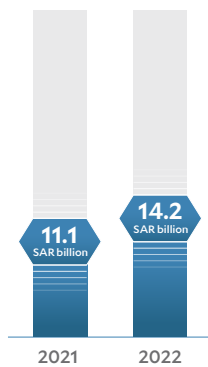
SIDF has actively contributed to development of the local industrial sector by granting a wide range of loans to support projects in different sectors throughout the Kingdom. The data provided indicates that a significant proportion of loans approved by SIDF have been allocated to industrial projects located in promising regions and cities.

### Approved loans during (2021-2022)

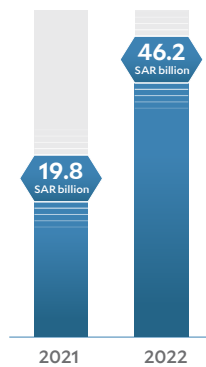
Number of approved loans:



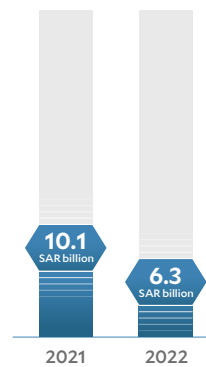
Value of approved loans



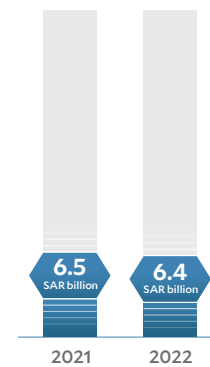
Total investments



Disbursed amounts



Repaid amounts



## Distribution of Approved Loans According to the Sectors of the National Industry Development and Logistics Program in 2022



### Promising Regions and Cities in 2022

**80%**

of the total value of approved loans for the amount of SAR 11.3 billion, against 15% prior to the application of the controls to increase SIDF's funding ratio for these projects

**36%**

of the total number of approved loans (40 loans), against 14% prior to the application of the controls to increase SIDF's funding ratio for these projects

### Small and Medium projects loans in 2022

SIDF's performance for this fiscal year (2022) was characterized by the approval of a high percentage number of loans for industrial SMEs

**78%**

of SIDF's loans are allocated to industrial SMEs out of the total approved loans of 87

**1.1** SAR billion

Value of SIDF's loans for industrial SMEs

## Cumulative Lending Activity until end of 2022

SIDF accomplishments from its inception in 1974 until conclusion of the fiscal year 2022 indicate the favorable outcomes of projects that have received loans from SIDF. Additionally, SIDF has provided valuable consultancy assistance in various areas such as technical, administrative, financial, and marketing aspects to support these projects.



**4904** loans

Number of loans provided by SIDF since its establishment to the end of fiscal year 2022.



**212.8** SAR billion

Total value of approved loans by SIDF to the end of fiscal year 2022.



**141.9** SAR billion

Value of disbursed amounts.



**89.9** SAR billion

Value of repaid amounts.



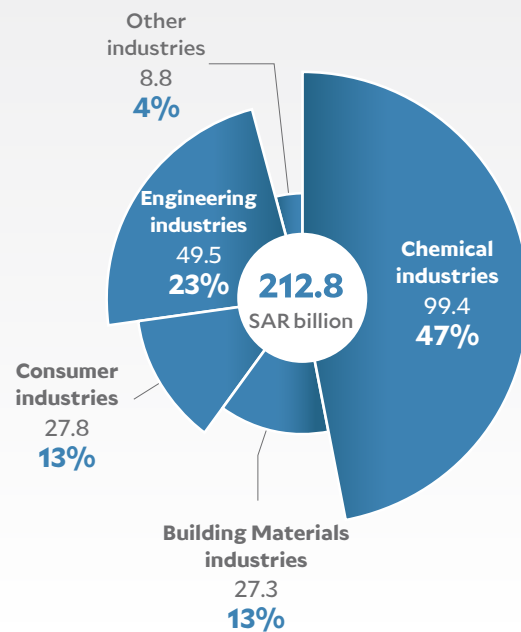
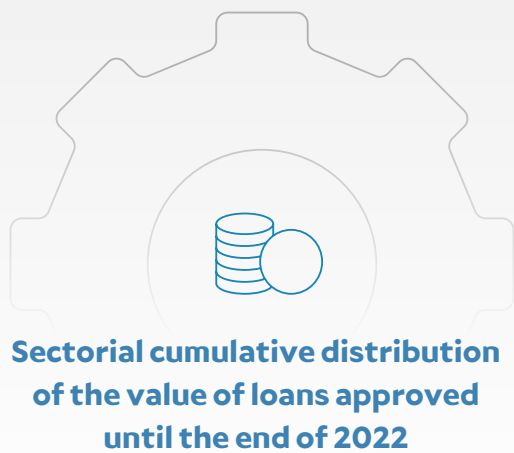
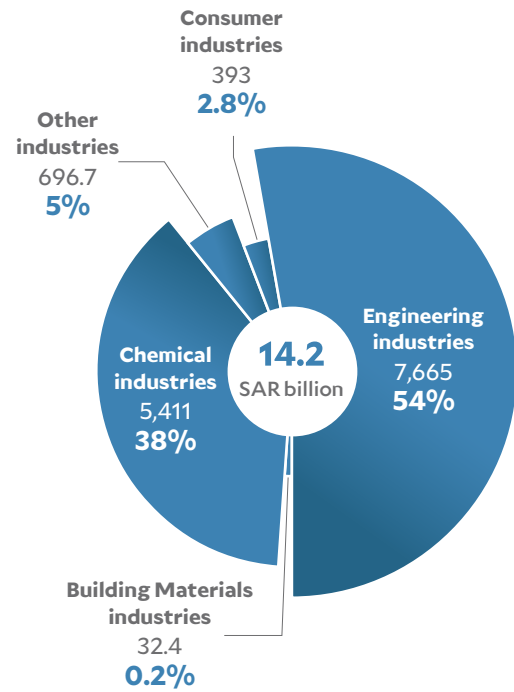
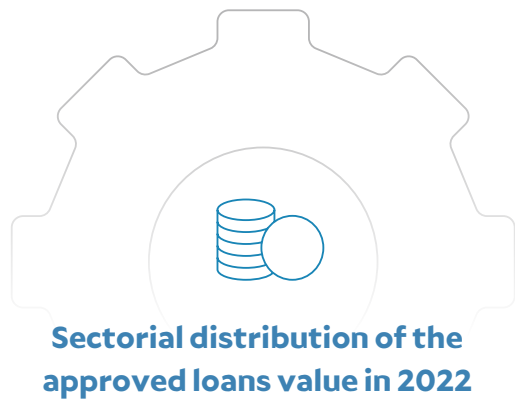
**63%**

Is the percentage of repaid loans out of total disbursed loans.



## First: Sectorial Distribution of Approved Loans

By reviewing SIDF's lending activity, which covers key industrial sectors in the Kingdom of Saudi Arabia, in accordance with the approved loans value, the following diagram summarizes the cumulative allocation distribution up to the end of 2022 for each of these sectors, as follows:



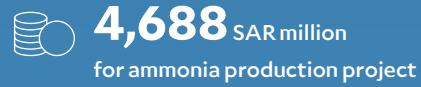
## Chemical Industries Sector



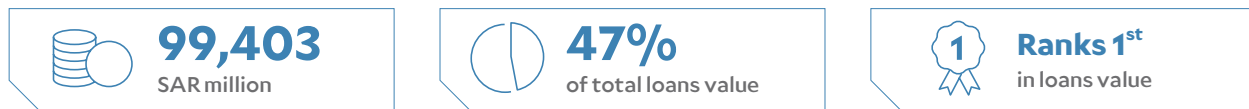
### Approved loans during 2022



### The new top approved loans



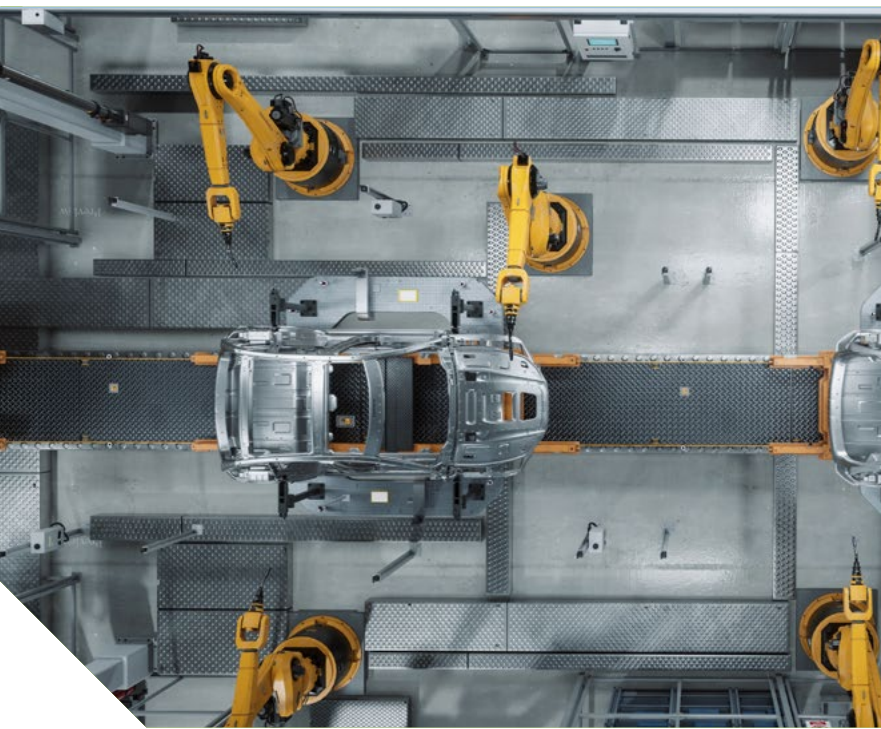
### Approved cumulative loans until 2022



### Cumulative loans for this sector for the years 2020 – 2022 (millions of riyals)



## Engineering Industries Sector



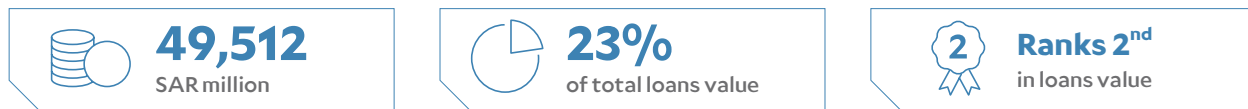
### Approved loans during 2022



### The new top approved loans



### Approved cumulative loans until 2022



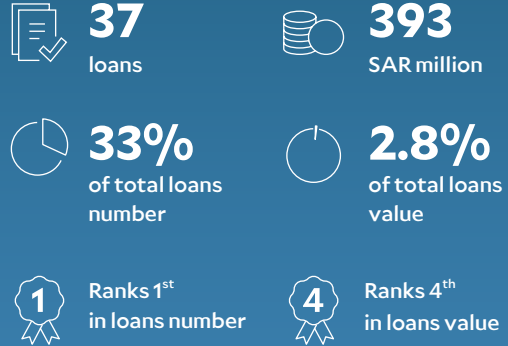
### Cumulative loans for this sector for the years 2020 – 2022 (millions of riyals)



## Consumer Industries Sector



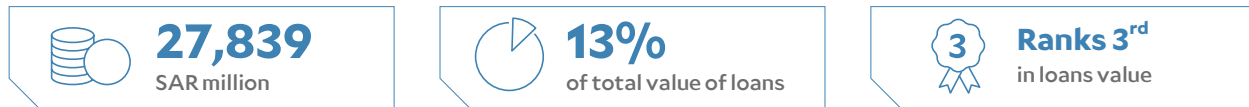
### Approved loans during 2022



### The new top approved loans



### Approved cumulative loans until 2022



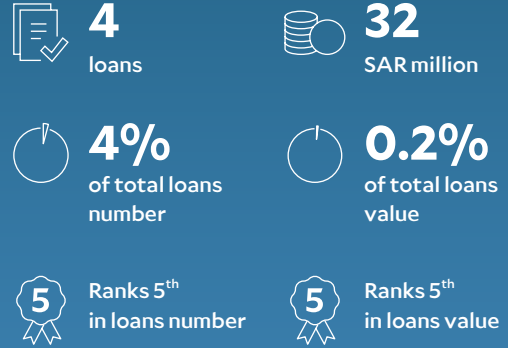
### Cumulative loans for this sector for the years 2020 – 2022 (millions of riyals)



## Building Materials Industries Sector



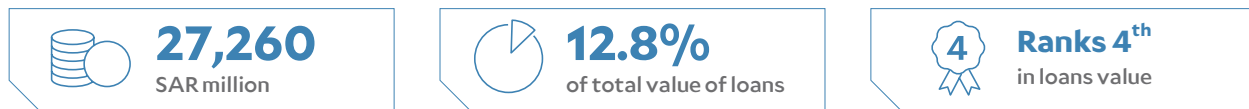
### Approved loans during 2022



### The new top approved loans



### Approved cumulative loans until 2022



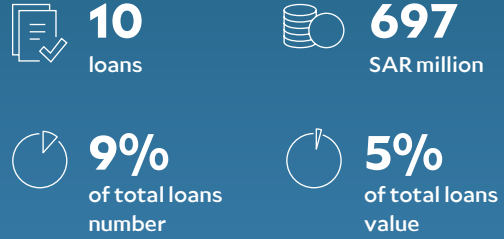
### Cumulative loans for this sector for the years 2020 – 2022 (millions of riyals)



## Other Industries Sector



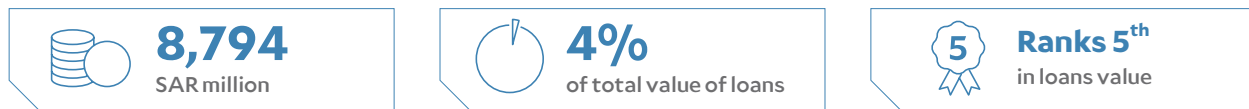
### Approved loans during 2022



### The new top approved loans



### Approved cumulative loans until 2022

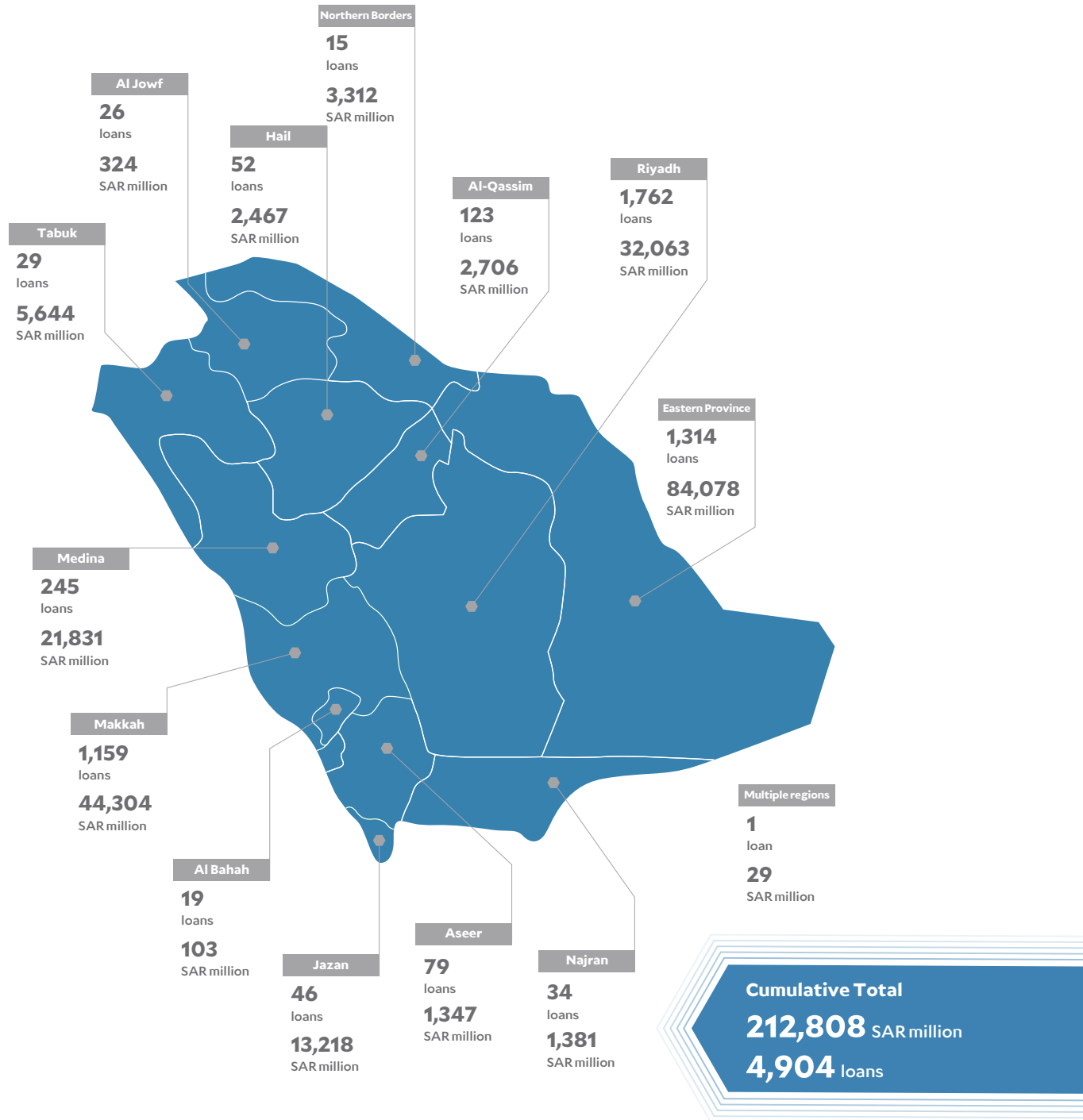


### Cumulative loans for this sector for the years 2020 – 2022 (millions of riyals)



## Second: Geographical Distribution of Approved Loans

Figure of geographical distribution of total SIDF approved loans, in terms of number and value of loans, across regions of the Kingdom until the end of 2022

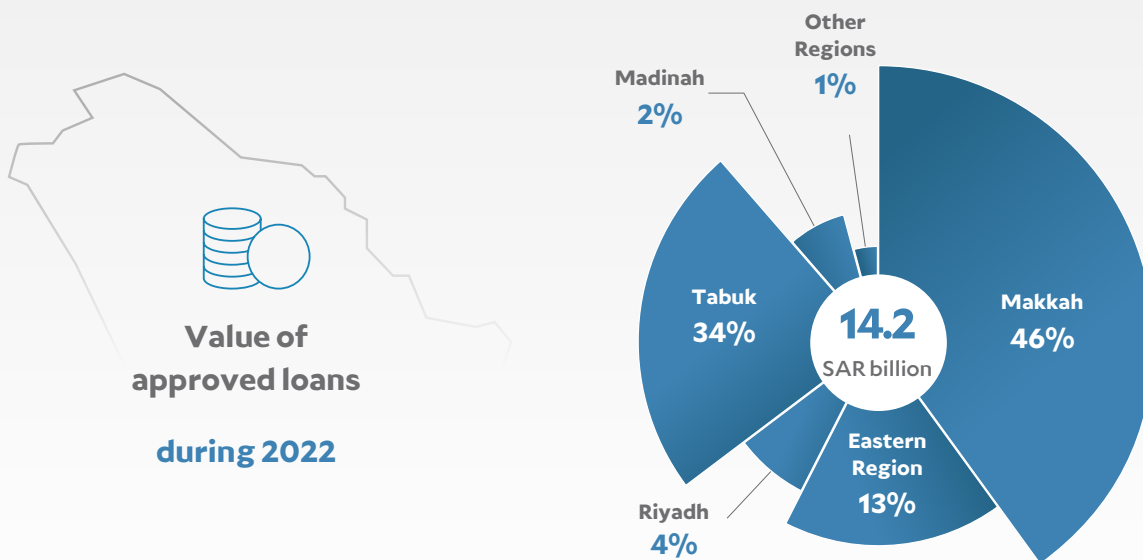
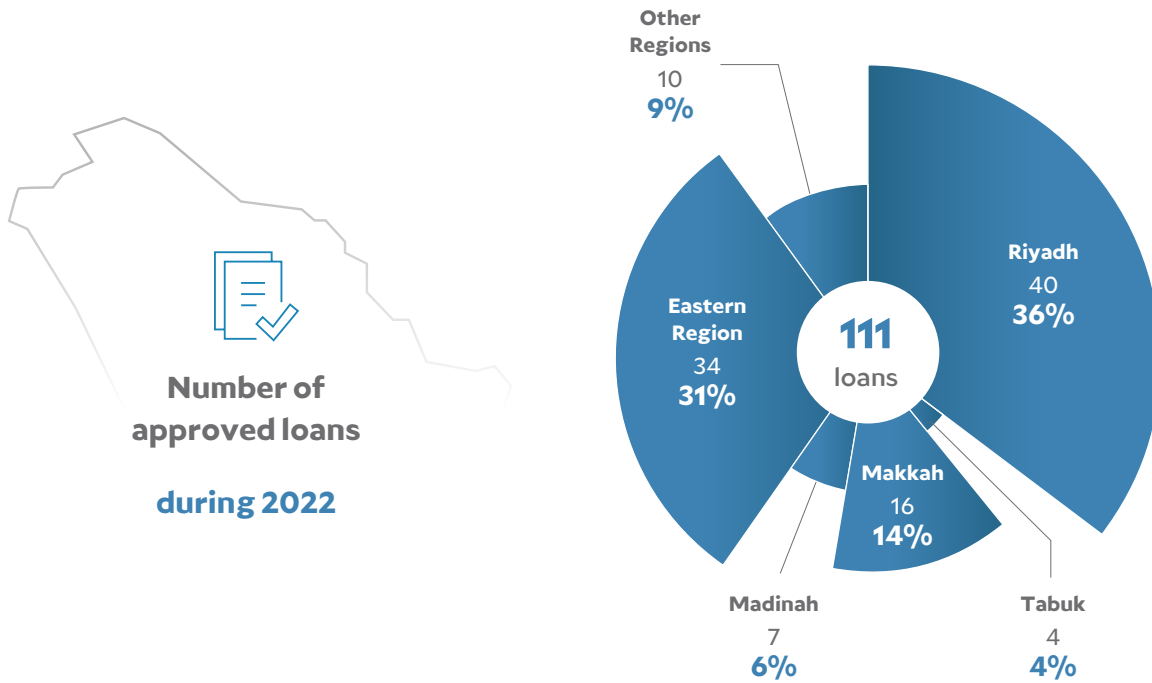




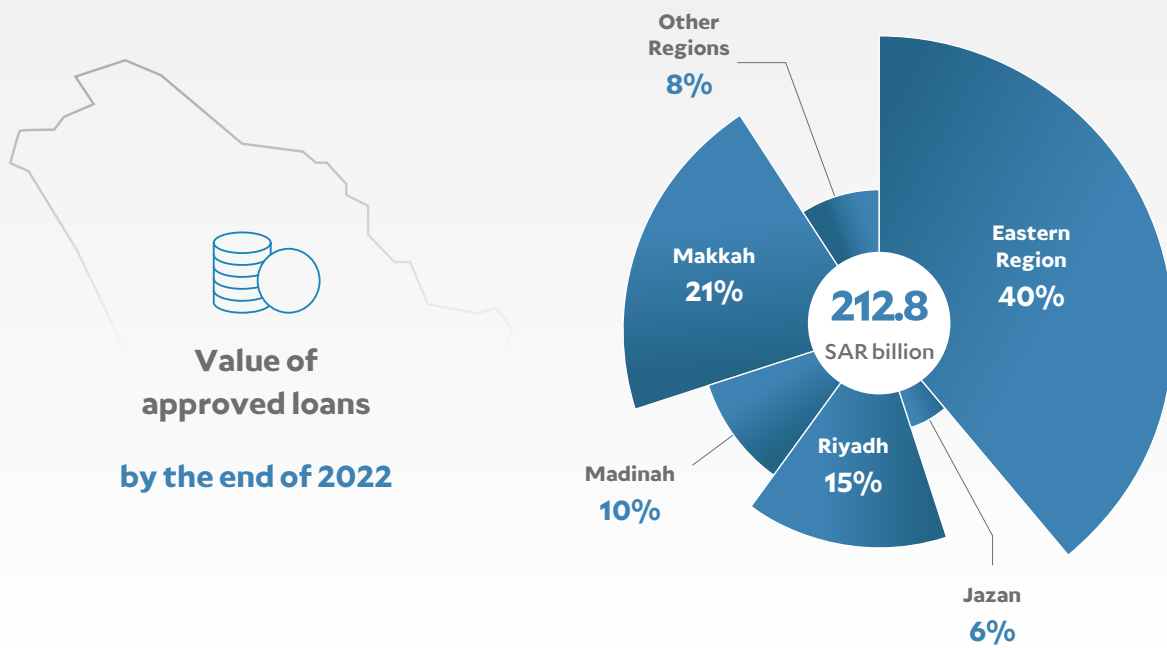
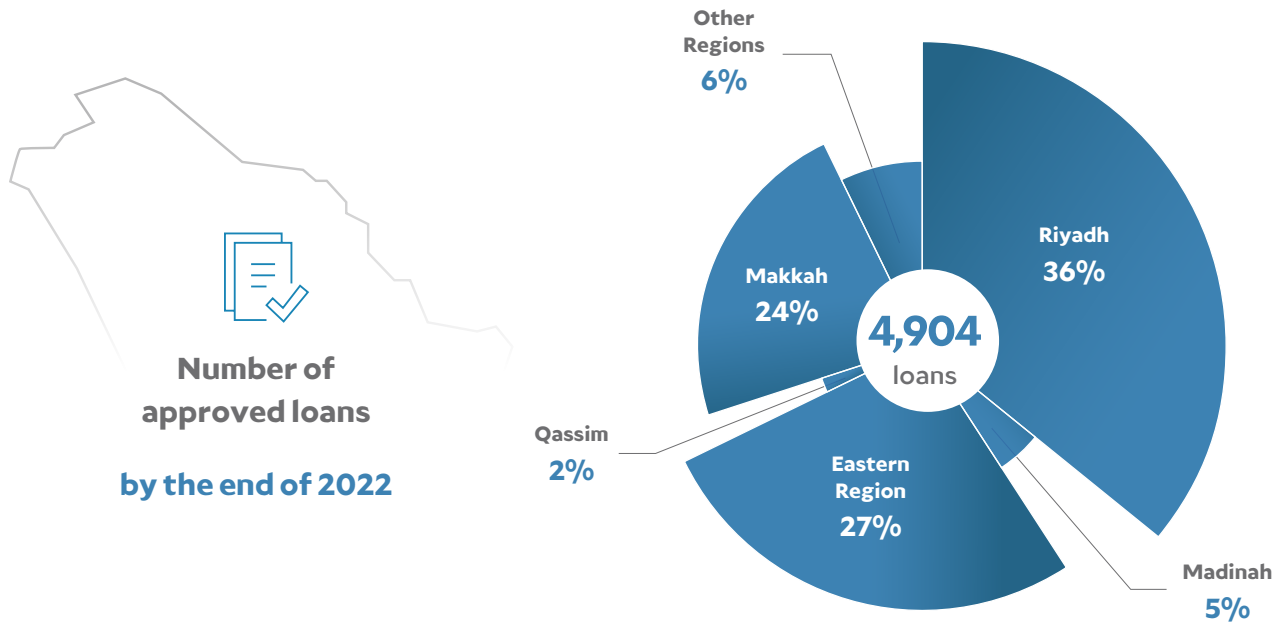
Some projects financed by SIDF



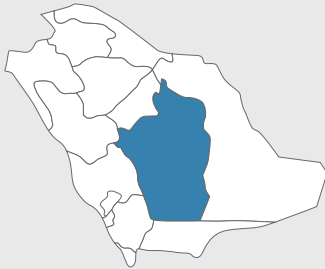
### Geographical distribution of approved loans during 2022



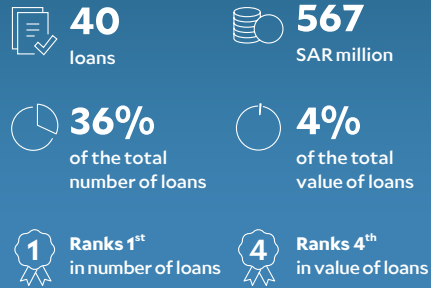
### Cumulative geographic distribution of approved loans by the end of 2022



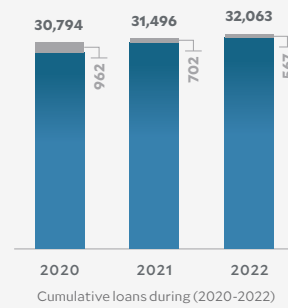
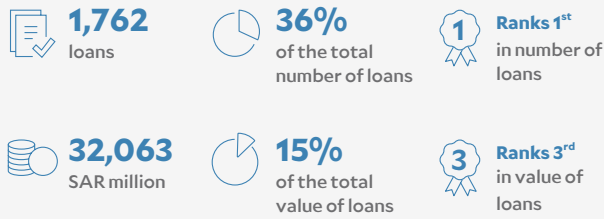
## Riyadh Region



### Approved loans during 2022



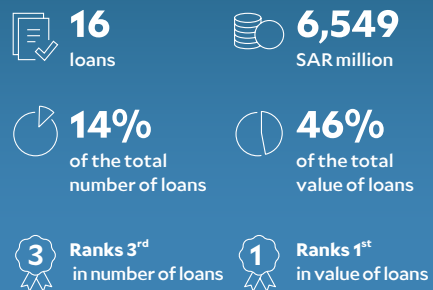
### Cumulative approved loans until the end of 2022



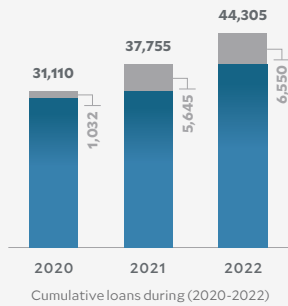
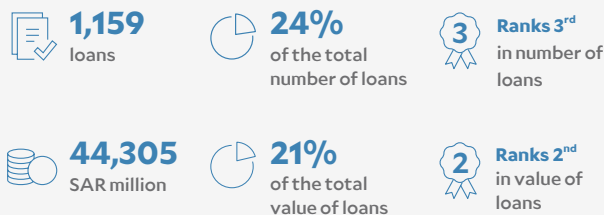
## Makkah Region



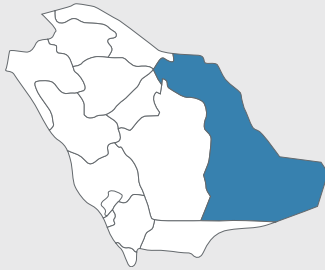
### Approved loans during 2022



### Cumulative approved loans until the end of 2022



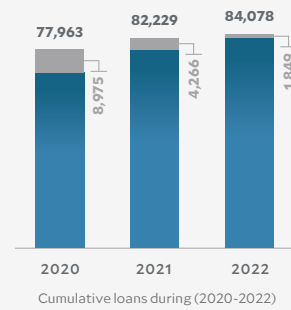
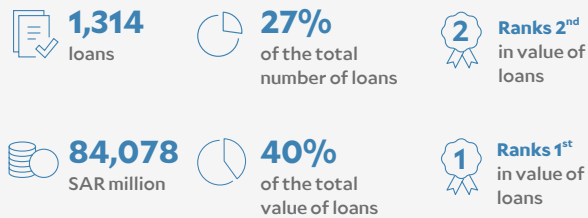
### Eastern Region



#### Approved loans during 2022



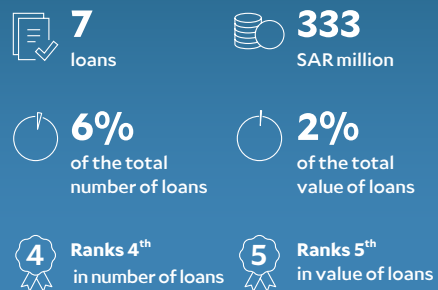
#### Cumulative approved loans until the end of 2022



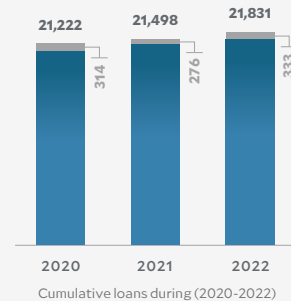
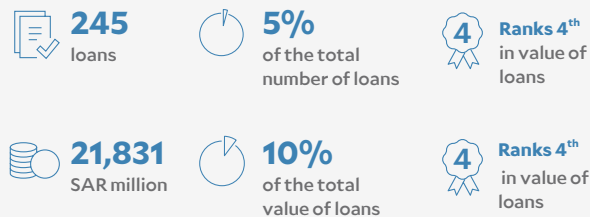
### Madinah Region

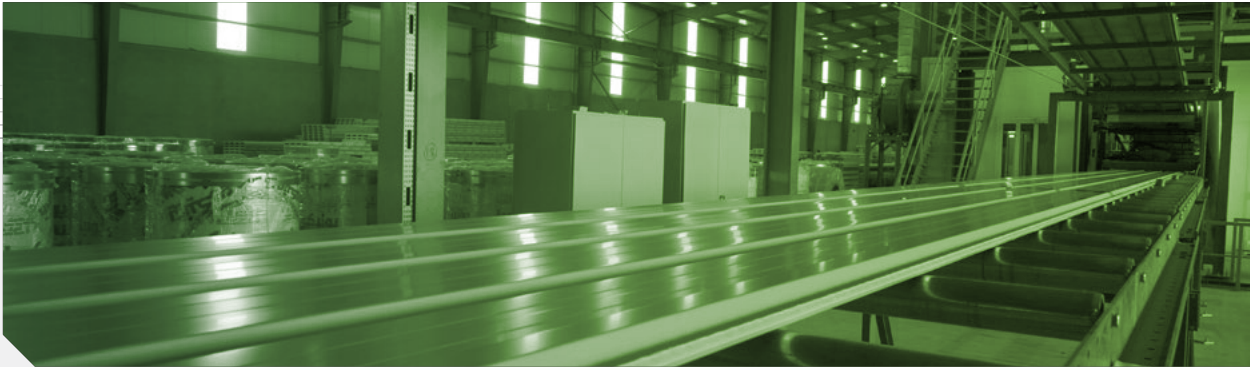


#### Approved loans during 2022



#### Cumulative approved loans until the end of 2022



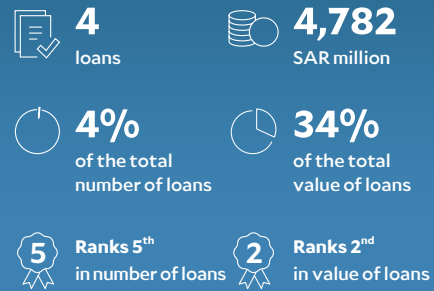


Some projects financed by SIDF

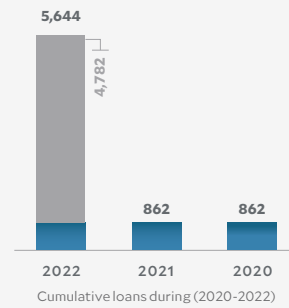
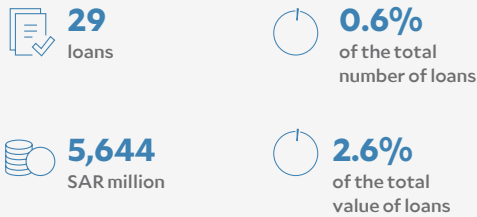
### Tabuk Region



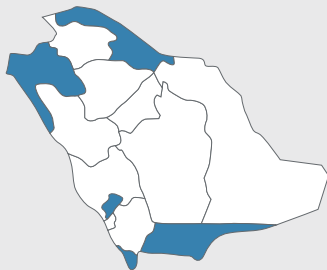
#### Approved loans during 2022



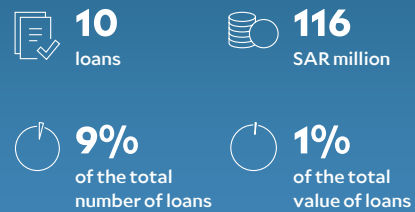
#### Cumulative approved loans until the end of 2022



### Other Kingdom regions

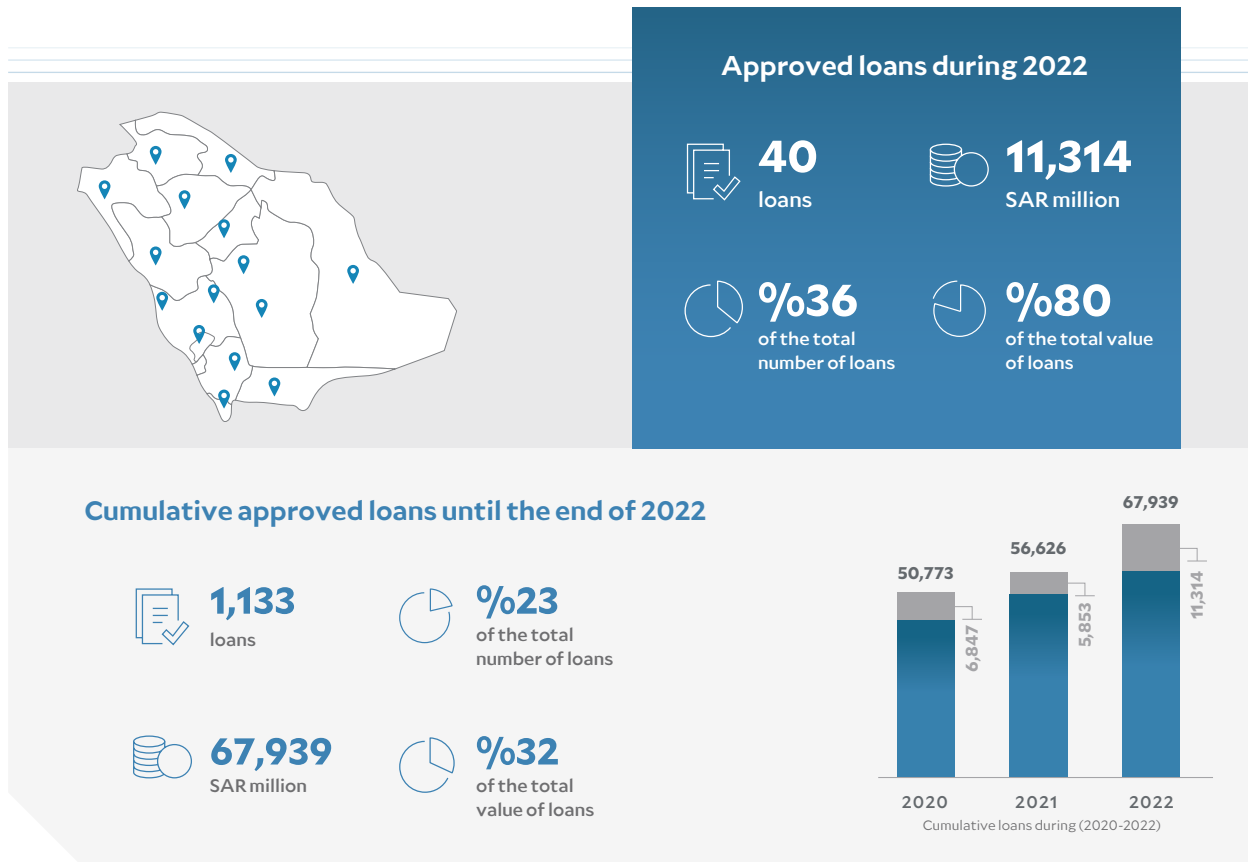


#### Approved loans during 2022



## SIDF Approved Loans for Promising Regions in the Kingdom

SIDF Board has given its approval to a range of new regulations and features that establish the percentage of financing provided by SIDF for industrial projects in promising regions and cities throughout Saudi Arabia. These regions lie outside the boundaries of the central regions and cities of the country. This initiative aligns with Resolution No. 296, issued by the Council of Ministers on 14/10/1432 H, which sanctions an increase in the loans granted by SIDF for projects in less developed regions and cities (promising regions) from 50% to 75% of the total project cost. Moreover, the repayment period for these loans has been prolonged from 15 to 20 years.





Some of the projects financed by SIDF



## Third: Approved Loans for Financing Programs and Products

In line with SIDF’s ongoing strategy to support the diverse industrial landscape in Saudi Arabia, the organization has introduced a comprehensive set of specialized financing programs. These programs are designed to create appealing and promising investment environments, encourage investors in start-ups, foster digital transformation, and enhance energy efficiency in existing projects.

### Financing Programs

#### During 2022

##### “Tawteen” program

to raise local content through partnerships with major companies

**10**  
loans

**152.5**  
SAR million

##### “Afaq” program

to enable SMEs Empowerment

**19**  
loans

**265.6**  
SAR million

“Mutajadeda” program to stimulate investments in the renewable energy components industry and support independent energy projects

**2**  
loans

**224.9**  
SAR million

##### “Tanafusiya” program

to improve factory efficiency and support automation to raise productivity and competitiveness

**4**  
loans

**216.6**  
SAR million

##### The “Land and Loan” Platform

is integrated with a number of government and private entities

**2**  
loans

**11.6**  
SAR million

#### Since launch to the end of 2022

##### “Tawteen” program

since its launch in 2019

**34**  
loans

**1,452**  
SAR million

##### “Afaq” program

since its launch in 2018

**54**  
loans

**728.6**  
SAR million

##### “Mutajadeda” program

since its launch in 2019

**13**  
loans

**314.2**  
SAR million

##### “Tanafusiya” program

since its launch in 2019

**10**  
loans

**645.6**  
SAR million

##### The “Land and Loan” Platform

since its launch in 2018

**18**  
loans

**161.4**  
SAR million

\* The above programs offer incentives and additional services to the target sectors through the provided financing products.

## Financing Products

### During 2022

#### Working Capital Financing



**18**  
loans



**556.6**  
SAR million

#### Multipurpose Financing



**3**  
loans



**56.7**  
SAR million

#### Letter of Credit with Local Banks



**11**  
letters of credit



**74**  
SAR million

### Since launch to the end of 2022

#### Working Capital Financing



**156**  
loans



**2.1**  
SAR billion

#### Multipurpose Financing



**11**  
loans



**97**  
SAR million

#### Financing Supply Chains



**1**  
loan



**64**  
SAR million

#### Letter of Credit with Local Banks



**139**  
letters of credit



**878**  
SAR million

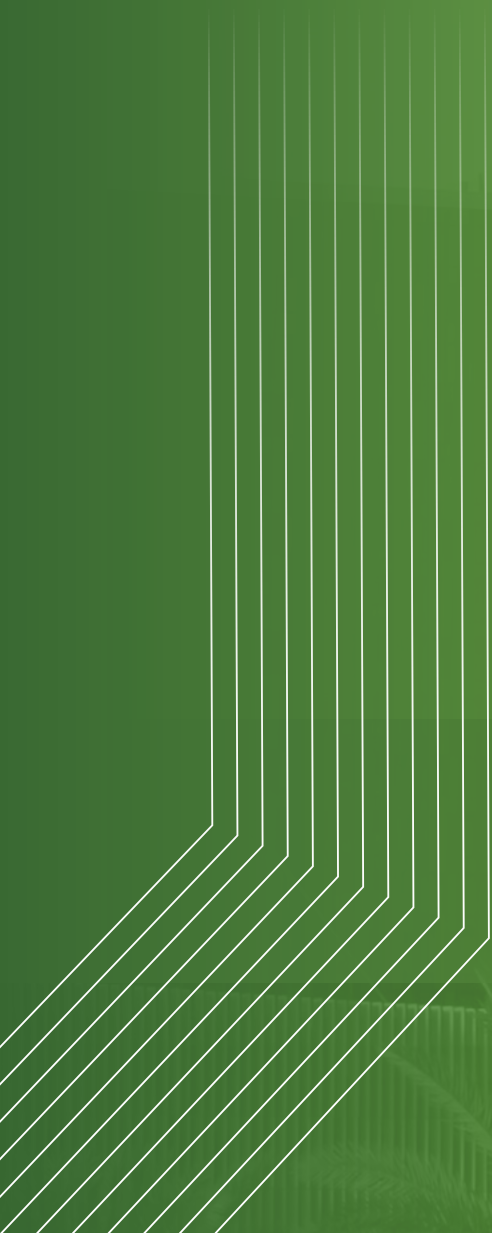


## Fourth: Projects that Started Production in 2022

Sector	Value of Loans (SAR Million)	Number of Projects	Estimated number of Employees
Chemical Industries	1,780	14	456
Engineering Industries	1,296	6	380
Other Industries	283	7	160
Consumer Industries	231	17	700
Building Materials Industries	46	3	237
<b>Total</b>	<b>3,636</b>	<b>47</b>	<b>1,933</b>

# 05

## SIDF Strategy





## SIDF Strategy

During 2022, SIDF focused on three major priorities based on initiatives and activities:



### First: Customer Enablement

SIDF has a client-centric approach during the design, lending and communication phases, to ensure that all client needs are met throughout their business journey.



### Third: Ideal Work Environment

SIDF always seeks to ensure a strong work culture, through building a solid structure, creating a convenient atmosphere, and establishing a resilient culture, to remain the best place to work.



### Second: Institutional Excellence

By institutionalizing its efforts, SIDF is enhancing the quality of work to achieve institutional excellence through high quality and correct documentation and data storage.

SIDF's strategy is a testament to its continuous commitment to drive industrial transformation in Saudi Arabia. The strategic plan revolves around four key pillars that are closely interlinked with specific objectives. These objectives aim to empower the ecosystem by offering experience and knowledge-based products and services, and to boost investment appeal through a range of offerings. To ensure the success of the strategy, SIDF is fortified by strong organizational capabilities and a sustainable service delivery model.



**Impact Maximization Axis, with the aim to achieve the following strategic objectives:**

1. Maximizing economic impact.
2. Stimulating investment in national priority projects.
3. Stimulating private sector financing.



**Industrial ecosystem Enablement Axis, with the aim to achieve the following strategic objectives:**

1. Disseminating knowledge and active ideas.
2. Aligning the public and private sectors.
3. Identifying and anticipating customer needs.
4. Providing a seamless customer experience.



**Operational Excellence Command Axis, with the aim to achieve the following strategic objectives:**

1. Improving internal processes.
2. Ensuring financial sustainability.
3. Optimizing governance, risk management, and compliance.



**Establishment of Human Capital and Qualified Systems Axis, with the aim to achieve the following strategic objectives:**

1. Adopting a culture of accomplishment and customer centricity.
2. Attracting and retaining the best talent.
3. Optimization through digitalization and automation.

## Main Objectives of Strategic Plan



### 1. Maximizing Economic Impact

SIDF finances projects that contribute to the growth and prosperity of the Saudi economy by promoting economic diversification, generating employment opportunities for nationals, and facilitating nationalization efforts.



### 2. Stimulating Investments in National Priorities

Stimulating the private sector to invest in national priority industries through incentive products and services.



### 3. Disseminating Knowledge and Active Ideas

Promoting national capabilities, offering valuable knowledge and data to benefit the ecosystem, and supporting decision-making processes through a range of approaches, courses, and programs, as well as sharing high-quality research and intellectual guidance.



### 4. Aligning the Private and Public Sectors

Striving to garner backing for the private sector by efficiently recognizing barriers and devising suitable solutions to surmount them, along with collaboration with stakeholders to drive policy reforms when necessary, thus influencing the private sector positively.



### 5. Identifying and Anticipating Customer Needs

Actively recognizing ecosystem needs to introduce and enhance financial and non-financial services and products that optimize their economic influence.



### 6. Improving Internal Processes

Constantly evaluating and improving processes within each function across SIDF's departments and divisions to deliver such processes in utmost efficiency, quality and productivity internally and externally.



### 7. Stimulating Private Sector Financing

Actively encouraging private sector involvement in funding ongoing projects.



### 8. Providing a Seamless Customer Experience

Consistently and effectively delivering SIDF services and products to customers at every touchpoint, ensuring their satisfaction and loyalty.



### 9. Ensuring Financial Sustainability

Seeking to secure SIDF income flow and production cost structure, to ensure the continuation of the operational and growth activities



### 10. Optimizing Governance, Risk Management, and Compliance

Enabling SIDF to achieve its objectives, address uncertainties and maintain integrity at work.



### 11. Optimization Through Digitalization and Automation

Digitizing and automating SIDF operations, implementing the necessary systems and capabilities to achieve exceptional operational efficiency.



### 12. Attracting and Retaining the Best Talents

Looking for a highly talented and proficient workforce within a conducive environment that fosters the development of a robust and skilled pool of human resources.






### 13. Adopting a Culture of Accomplishment and Customer Centricity

Creating a framework of principles, standards, and customer-focused strategies that inspire achievement throughout every department and segment.



## SIDF Key Performance Indicators for 2022

In order to achieve its Strategic Objectives for 2022; SIDF has approved five KPIs, as shown in the table below:

KPI	Target 2022	KPI Status <sup>(1)</sup>	Actual Value	Measurement period
<b>Objective 1: Maximizing Economic Impact</b>				
Financing projects that foster the expansion and prosperity of the Saudi economy by diversifying industries, boosting domestic employment, and encouraging nationalization efforts.				
Economic impact of approved projects mean rate	Promising		Promising	2022
<b>Objective 2: Stimulating Investments in National Priority Projects</b>				
Objective description: Stimulating the private sector to invest in national priority projects through attractive value added offerings.				
Value of approved loans	SAR 12 bn		SAR 14.2 bn	2022
Percentage of approved loans for SMEs to the total approved loans	80%		78%	2022
Value of disbursed loans	SAR 6 bn		SAR 6.3 bn	2022
<b>Objective 3: Ensuring Financial Sustainability</b>				
Striving to establish stable revenue streams and a sustainable cost framework to sustain ongoing operations and facilitate business growth.				
Value of repaid loans	SAR 6 bn		SAR 6.4 bn	2022
<b>Objective 4: Achieving Excellence in Customer Experience</b>				
Enhancing the value added by SIDF services at every customer interaction point, fostering customer satisfaction and loyalty.				
Customer satisfaction index	65%		74%	2022
<b>Objective 5: Improving Employee Experience</b>				
Striving to establish a conducive environment that cultivates a talented and proficient workforce, ensuring the presence of a robust and competent pool of human capital.				
SIDF employee engagement index	75%		82%	2022

(1) Status Indicator Color Codes:  Fully achieved (99% or more)  Partially achieved (85%-99%)  Unachieved (below 85%)

# 06

## Digital Transformation and Information Technology





## Digital Business Development:

### 1. Governance of Business Process Improvement Committee, and Development of Technical Production Line:

- » Creating a governance and operational framework for the Business Process Improvement Committee.
- » creating a priority and impact measurement matrix to applied on 145 requests within the committee's portfolio. As a result, SIDF significantly reduced the number of requests to just 64, cutting down the expected timeline to approximately 8 months. This initiative also saved nearly 700 working days for the technical staff.
- » Conducting more than 100 meetings, workshops, and awareness sessions on the new matrices and standards with 29 of SIDF departments' representatives. Nearly 12 SIDF general managers were educated on them.

### 2. Robotic Process Automation (RPA):

- » A process that involves automating and simulating tasks and work performed by staff members using flexible software that adheres to work rules and procedural sequences to complete operations automatically.
- » Automation significantly impacts the efficiency and effectiveness of SIDF operations and processes. This software increases productivity, enhances customer experience, raises compliance levels, reduces operating time and cost, and eliminates or reduces errors.
- » RPA has been applied to several operations and procedures at the Financial Department and the Market Research Department.

### 3. Improving Customer Experience on (e-Loans):

- » Enhancing user experience and “Tamkeen” Portal interface to make it more user-friendly and intuitive.
- » Improving and simplifying the data-entry process required by users.
- » Adding advanced features that contribute to facilitate user experience.
- » Creating e-links with Bayan Financial Statements.

Implemented enhancements have successfully facilitated a seamless and direct application process for loans and related services for SIDF customers. As a result, customer satisfaction levels have witnessed a significant increase, as demonstrated below:

**74%**

Achieved percentage in 2022 (compared to 61% in 2021)

**65%**

Target percentage for 2022

### 4. Automation of National Infrastructure Fund (NIF) Services

- » To Realize a successful launch of the new National Infrastructure Fund (NIF) on the Tamkeen platform, all technical requisites have been met. SIDF is dedicated to offering creative financial and non-financial options that foster the participation of the private sector in key sectors such as transportation, energy, water, industry, communications infrastructure, education, health, and more.

### 5. Commencement of the Implementation Phase of the Data Management Project

- » SIDF has concluded the preparatory and survey stages and has commenced the execution phase of the Data Management Framework, following the guidelines set forth in the Royal Order that establishes a data office within the National Information Center.

### 6. Automation of Procurement and Contracts Procedures (Monafasat)

Monafasat System represents a significant leap forward in automating procurement processes and operations while enhancing collaboration among various departments. The system incorporates the following features:

- » Requesting tender approval.
- » Developing the bid documents.
- » Managing the operations of procurement committees.
- » Approving committee reports.
- » Drafting and concluding contracts.
- » Issuing work completion certificates.
- » Presenting dashboard for executive management.

### 7. Evaluating and Promoting Business Trends and new Technical Standards

- » By organizing the International Technology Day event and providing training to SIDF employees on practical technical tips to enhance their skills and knowledge for carrying out their daily tasks more effectively.
- » Enhancing satisfaction of SIDF's internal customers while boosting and increasing awareness of their technical expertise..

### 8. Launching a Customer Relationship Management (CRM) System for all IT, Support Services, Human Resources, Communication Management and Legal Affairs Departments

- » Facilitating request submission and tracking, through a unified platform for internal services.
- » Enabling current or prospective departments to introduce additional services with greater flexibility.
- » Automatically putting into action and overseeing service level agreements.
- » Facilitating generation of reports and indicators for service performance.

### 9. Implementing Secure Application Development Approach

SIDF has satisfied the technical requirements for initiating an Application Development Automation project, establishing a secure approach for application and infrastructure development, and advancing comprehensive application development security with automated quality testing.

## 10. Developing HR Services Platform (Mawarad Plus)

- » SIDF has launched an integrated system that utilizes advanced cloud technologies to manage human resource operations and employee services.
- » The platform has eliminated paperwork and automated the human resource processes (over 20 processes).
- » The platform provides simplified and modern user interfaces.
- » The platform offers secure access to the system within and outside SIDF network.

## 11. SIDF has received Several Technical Certificates and Awards in 2022

- » SIDF achieved a significant milestone by being awarded the Gold Level of the prestigious King Abdulaziz Quality Award (KAQA). Among more than 300 governmental, private, and non-profit organizations competing in the award, SIDF emerged as one of the two entities in the category of entities affiliated to ministries to receive this esteemed recognition.
- » SIDF has been granted certifications for ISO 9001, ISO 27001, and ISO 20000.
- » SIDF's Data Center has achieved Tier II Certification for Design Documents at the Uptime Institute Awards.
- » SIDF has won the Middle East Award for Excellence in Government and Smart Cities in its 27th session under the category (Excellence in Government Services)
- » SIDF has obtained a Government Software License Certificate for Free and Open-Source Software by the Digital Government Authority
- » SIDF has joined the European Foundation for Quality Management (EFQM).

## Digital services provided by SIDF

No.	Service	Target Duration	Actual Duration Average
1	Request for an industrial loan	150 days	126 days
2	Apply for "Land and Loan" (MODON)	150 days	100 days

## SIDF Journey in Digital Transformation

The Digital Government Authority (DGA) has introduced a framework of guidelines and benchmarks to evaluate the level of compliance with standards and enhance the efficiency and effectiveness of government organizations. This initiative aims to support the objectives of Saudi Vision 2030. Below is an outline of the main criteria, as observed in the 10th digital transformation assessment for 2022 in comparison to 2021.



# Organize the House (OTH) Program

Organize the House (OTH) program is a strategic initiative that seeks to digitally revolutionize the various departments of SIDF, streamline their operations through automation, and establish effective IT management practices. The ultimate goal is to maximize the Fund's technical capabilities, generate greater value, and optimize overall performance.

**7**

Total Paths

**32**

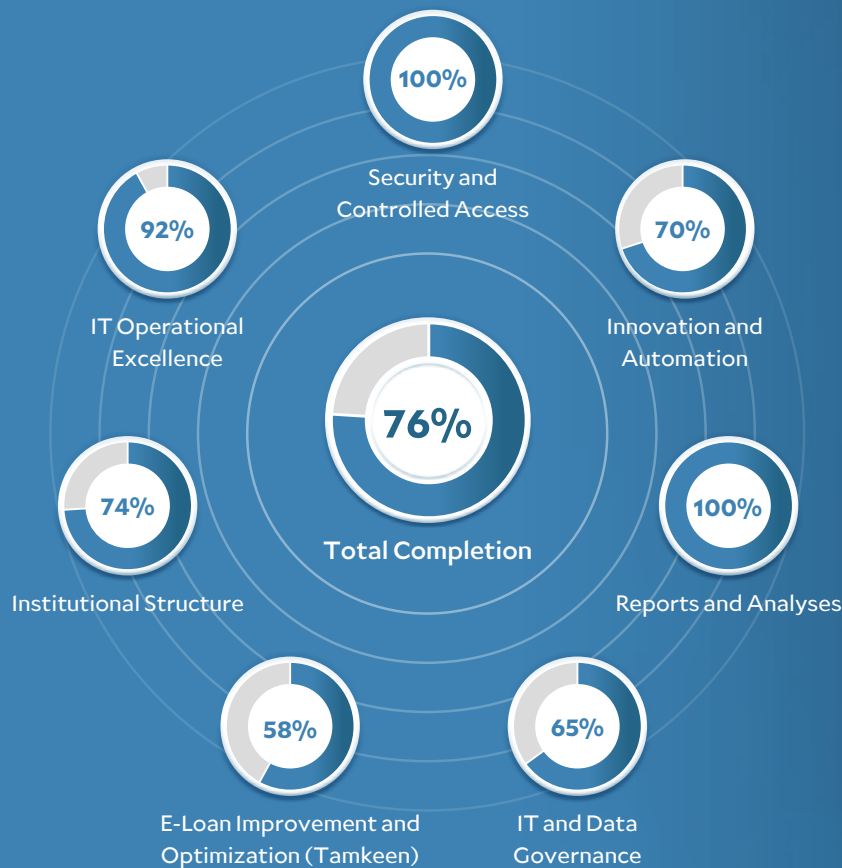
Total OTH projects

**22**

Projects completed during 2021 and 2022

**10**

Projects planned to be completed in 2023



## Key Completed Projects



### Mawarid Plus

Advanced HR Cloud Solution



### SIDF Academy Learning Department System

Learning Department Cloud System



### CRM System

Unified CRM System across multiple departments



### Internal Portal Re-design

Redevelopment of the internal e-portal (Bawabaty) while improving design and content



### Secure Access Management

Implementing an identity and access management system and role-based access control to enhance the security of information systems



### SIDF Data Warehouse

Central, secure, and reliable data warehouse to store process and filter data. The warehouse will unleash the power of analytics and data in a better-controlled and regulated environment



### New Product Innovation

SIDF has innovated new products and business scenarios empowerment through Tamkeen (e.g. real estate mortgage fixed assets, virtual IBAN, and Land and Loan Program with MODON)




# Technical Awards and Certificates



جائزة الملك عبدالعزيز للجودة  
KING ABDULAZIZ QUALITY AWARD

**King Abdulaziz Quality Award (KAQA)**

SIDF won the prestigious Gold Level of the King Abdulaziz Quality Award (KAQA), surpassing more than 300 competing organizations.




**ISO**

SIDF has been granted ISO certifications in quality management, IT service management, and information security management.




**Digital Transformation Measurement**

SIDF has achieved integration at the Government Digital Transformation Measurement (2022)



**TIER**

SDIF's Data Center has achieved Tier II Certification for Design Documents in the Uptime Institute Awards.



**SAP**

In 2022, SIDF was awarded the SAP Customer Center of Expertise certification for innovation.



**Digital Government Authority**

SIDF has been obtained Government Software License Certificate for Free and Open-Source Software from the Digital Government Authority.



**ME**

SIDF has won the Middle East Award for Excellence in Government and Smart Cities in its 27th session



**EFQM**

SIDF has joined the European Foundation for Quality Management (EFQM)



**07**

**Human Resource  
Development**



## Human Resource Development

In its pursuit of enhancing the working environment across various platforms and fostering a competitive atmosphere to attract top national talents and expertise, SIDF remains committed to implementing the highest international standards of quality and efficiency. In 2022, SIDF achieved several notable milestones in this regard, including:

### First: Organizational Culture

In its continuous pursuit of improvement and prioritizing employee satisfaction, SIDF has attained an impressive customer satisfaction rate of 82%. Moreover, for the third consecutive year, SIDF was proudly recognized with the prestigious 2022 Great Place to Work certification. This certification involves conducting surveys to gather feedback and suggestions from employees, aiming to enhance the work environment and overall employee experience at SIDF. By actively participating in this initiative in 2022, SIDF demonstrated its commitment to ongoing enhancement and implemented various initiatives to cater to the needs of its employees, resulting in positive improvements in both the work environment and operational processes.

The survey conducted by the HR Department involved the active participation of representatives from all departments of SIDF, known as the “Best Work Environment Ambassadors.”



## Second: Recruitment

By the end of the fiscal year 1443 - 1444H, the combined count of male and female employees at SIDF was 993, out of which 962 were Saudi nationals. These individuals were distributed across various roles, including leadership, supervision, specialization, professionalism, technical expertise, and administrative support. Consequently, Saudi employees accounted for approximately 97% of the total workforce. Additionally, SIDF successfully attracted and hired 145 new employees throughout the year, with a particular focus on departments directly involved in core activities. This strategic approach aimed to contribute significantly to SIDF's primary goals of supporting and advancing the industrial sector in the Kingdom.



**993** employees

by end of 2022



**145** employees

attracted across different departments



**97%**

are Saudi employees

## Third: Training and Qualification Program

For the third consecutive year, SIDF has obtained an impressive 82% customer satisfaction rate and received the prestigious Great Place to Work certification in 2022. This certification involves a comprehensive survey that gathers feedback and suggestions from employees, with the goal of enhancing the work environment and overall employee experience at SIDF. By actively participating in this program, SIDF demonstrates its ongoing commitment to improvement and the implementation of initiatives to cater to the needs of its workforce, resulting in notable enhancements in the work environment and processes.



**2 employees**  
trained at the French Credit-Agricole Bank



**7 employees**  
trained at Roland Berger for Administrative Consultation



**45 trainees**  
in Nokhab Program out of 16,000 applicants



**83 trainees**  
in cooperative training from Saudi universities



**701 employees**  
attended short training programs, including 57 conferences and exhibitions



**29 candidates**  
on scholarships, 10 out of them in the top universities in the world. 2 in universities inside the Kingdom



**5 employees**  
received accredited career certificates CFA – SOCPA



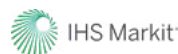
**20 employees**  
received training on institutional excellence



**12 Innovation Ambassadors**  
as candidates for international certificates in their field



**8 workshops**  
on innovation, quality of life, social intelligence, etc.



**4 employees**  
received training at IHS Markit



**8 employees**  
received English Language Program

### Phoenix Club

**1 employee**  
received practical training at Phoenix Club



**2 employees**  
received training at MODON

## Fourth: SIDF Academy

### Academy's Vision

To be a primary knowledge hub building human capabilities in priority sectors essential to achieving industrial evolution in the Kingdom.

### Academy's Mission

To build human capabilities of SIDF employees, customers, and agencies within the industrial ecosystem – through offering top-notch programs in collaboration with renowned training and educational institutions, and by incorporating innovative educational methods that align with SIDF's core functions and national objectives.

### Academy's Strategic Objectives



Developing specialized programs that focus on SIDF main functions.



Realizing strategic alignment with governmental and private organizations in the industrial ecosystem.



Building human capabilities to serve SIDF industrial development needs, customers, and the industrial ecosystem.



Concluding strategic partnerships with leading local and global learning and educational institutions to enhance the learning journey.



Building a matrix of skills and competencies in line with national goals.




## SIDF Academy Key Achievements

 <p><b>Financial Path</b></p>	 <p><b>Management &amp; Leadership Path</b></p>	 <p><b>Digitization &amp; Innovation Path</b></p>	 <p><b>Specialized Programs Path</b></p>
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**16**  
 Partnerships with educational and training providers

  
**+350**  
 Beneficiaries from the government and private sectors

  
**8,188**  
 Trainees

  
**7**  
 Nokhab Programs

  
**20 seminars**  
 in various financial, industrial and economic fields

  
**37**  
 Training Programs

## Key Initiatives and Programs in 2022

### 1. Empowerment of Human Capabilities

SIDF Academy has played a crucial role in training and developing skilled individuals in alignment with Saudi Vision 2030. It offers high-quality education and training programs that cater to the needs of employees within the industrial ecosystem across various fields. The objective is to enhance the capabilities of human resources and provide specialized education of exceptional quality. To date, the SIDF Academy has successfully trained 8,188 individuals from both the industrial ecosystem and SIDF, including its customers. Among these, 2,787 participants benefited from the Academy's programs in finance, business, digitization, innovation, and professional development. Additionally, the Academy's Nokhab Programs served 225 trainees, and a total of 5,176 individuals attended seminars on topics related to finance, industry, and the economy.

## 2. Academy Portal

The SIDF Academy has introduced an online platform that provides a comprehensive view of its operations, staff members, registration processes for training programs, and reports generated by the Academy. This online portal serves as a convenient and centralized source of information for anyone interested in learning about the Academy's activities and accessing its services.

Academy's online portal offers beneficiaries the opportunity to access and explore a range of services, which include but are not limited to:

- » Accessing the training outline and academic calendar.
- » Enabling electronic registration for programs and seminars.
- » Examining the specifics of training programs, seminars, and the organizations offering such programs.
- » Viewing all policies and documents
- » FAQ.
- » Enabling direct contact with the support team

## 3. Industrial ecosystem Leaders Development Program (MIM+ )

SIDF Academy has created the Industrial Ecosystem Leaders Program with the intention of fostering participative leadership, innovation, and strategic thinking. The program drew the participation of 44 leaders from 13 industrial entities. It spanned across seven stages, both within the Kingdom and abroad, as indicated in the accompanying table.

Stage	Event	Provider
First	Stanford Center for Professional Development (SCPD) event	Stanford Center
Second	Leaders Coaching Program	L'ERMITAGE WOOD
Third	Top 50 event	Silicon Valley
Fourth	Al-Ula visit	CUBEX
Fifth	Knowledge series	MIT
Sixth	Training camp	CHICAGO BOOTH
Seventh	Orientations	Silicon Valley

### Program Key Objectives:

- » Promoting participative leadership, innovation and strategic thinking.
- » Empowering participants to learn about the latest leadership practices in the industrial sectors.
- » Aligning trends and promoting effective communication among industrial ecosystem leaders.

# 44

 Leaders

at the Industrial ecosystem  
Leaders Program

# 13

 Entities

from the Industrial ecosystem

# 7

 Stages

within the Kingdom and over-  
seas



#### 4. Scientific Research and Case Studies

- » SIDF has endorsed a collaborative research framework between SIDF Academy and both national and international universities in the key domains pertinent to the Kingdom's industrial sector.
- » SIDF has undertaken case studies on specific topics related to the challenges faced by the industrial sector. These studies have been carried out in a way that benefits the academic community and contributes to the development of benchmarks for local best practices.

The promotion of Scientific Research and Case Studies has yielded the below objectives:



Identifying research gaps that have yet to be explored in the local industrial sector.



Making a valuable contribution to the industrial ecosystem by conducting research or developing case studies that address the knowledge and data requirements of the industry.



Contributing to the improvement of learning outcomes in "Nokhab" programs in line with work requirements, to achieve SIDF's strategic goals.

## 5. Agreements and Partnerships with International and Local Entities

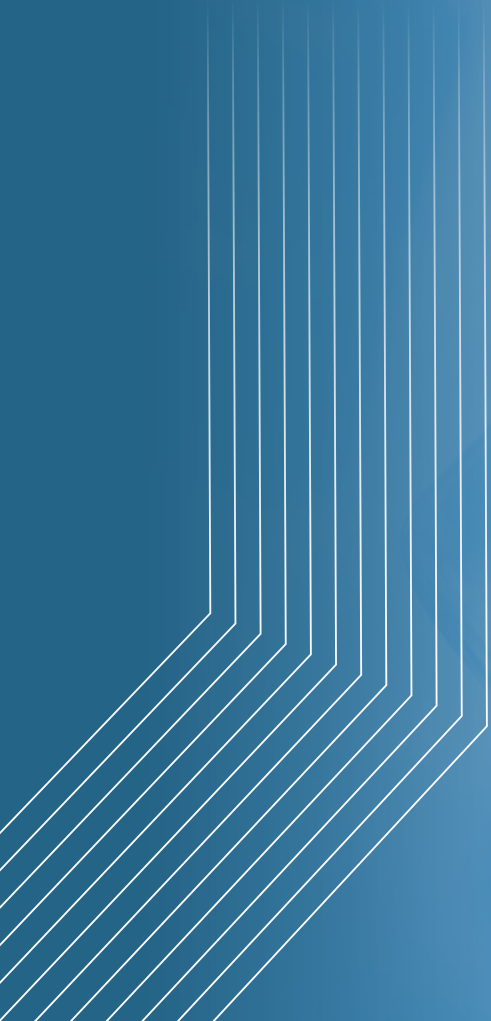
In 2022, SIDF Academy entered into partnerships with renowned international and local education and training providers. These collaboration agreements were aimed at enhancing the skills of employees in the industrial ecosystem, spanning both public and private sectors. The chosen universities and institutes possess excellent capabilities in diverse training fields. The primary objective was to foster the growth of the human capital sector within the Kingdom. In total, sixteen agreements were signed in 2022 with the following major organizations:

	Credit Analysis Program Training Agreement with Fitch Learning Ltd.
	Market Studies Agreement and Local Content Program Agreement with London Business School.
	Credit Analyst, Hackathon, Leadership and Business, Leading Creative Transformation in Critical Times agreements with Stanford University.
	Nokhab Engineers Program with the University of Berkeley.
	Economic Outlook for Industry and Mining Leaders Agreement with the University of Chicago.
	Training Agreement for the motivation of digitization and innovation strategy in industrial ecosystem with MIT.
	Silicon Valley Leadership Program with Silicon Valley.
	Leaders for the AIUla Journey Program with the Institute of Research and Studies at the Saudi Electronic University.
	Training Agreement for a series of virtual programs to transfer the actual work experience across v-work Program with MISK.
	Memorandum of Understanding to provide joint training programs with King Abdullah University of Science and Technology (KAUST).

# 08

Industry Study:

## Insights into the Human Vaccine Market





## Introduction:

A human vaccine is a type of biological substance that aims to prevent diseases by introducing weakened, killed, or fragmented microorganisms into the body. Its primary function is to activate the immune system, prompting the production of antibodies that can fight against specific pathogens and offer protection against future infections. Human vaccines can be found in various forms, such as liquid solutions, powdered form stored in vials, pre-filled syringes, or capsules.



There are **6** types  
of human vaccines with  
different biological platforms

## Vaccine Types:

Human vaccines are classified based on the specific biological components they utilize to induce immune protection against pathogens within the human body. There are six distinct types of vaccines, each employing different biological mechanisms. These categories include:

### 1. Live Attenuated Vaccines

Certain vaccines replicate the effect of a natural infection by utilizing a weakened version of a live virus or bacteria. These are known as live attenuated vaccines and are capable of inducing robust and long-lasting immunity. Unlike some other vaccines, live attenuated vaccines usually do not necessitate multiple doses or booster shots. For instance, the measles, mumps, and rubella (MMR) vaccine exemplifies this type of vaccine.

### 2. Inactivated Vaccines

Such vaccines consist of pathogens that have been rendered inactive. Usually, multiple doses of these vaccines are needed to establish and maintain immunity. The rabies vaccine serves as an example of this type of vaccine.

### 3. Subunit, Recombinant, or Protein Vaccines

These vaccines utilize components of a pathogen, such as proteins, sugars, or the germ's outer casing (capsid), to stimulate the immune system and generate immunity. Similar to inactivated vaccines, multiple doses may be required to establish ongoing protection. However, these vaccines are suitable for a broad range of individuals, including those with compromised immune systems and chronic health conditions. An example of this type of vaccine is the human papillomavirus (HPV) vaccine.

### 4. Toxoid Vaccines

To generate immunity, these vaccines employ an inactivated form of a toxin, known as a toxoid, which mimics the toxins produced by certain bacteria. A prime example of this type of vaccine is the tetanus and diphtheria vaccine.

### 5. Messenger Ribonucleic Acid (mRNA) Vaccines

mRNA vaccines utilize the genetic material (mRNA) of the pathogen to prompt human cells to produce a specific protein, which then triggers an immune response. An example of this type of vaccine is the COVID-19 vaccine.

### 6. Viral Vector Vaccines

Viral vector vaccines employ harmless viruses to transport genetic material from the targeted pathogen into the body, stimulating an immune response and promoting immunity. The Ebola vaccine serves as an illustration of this type of vaccine.

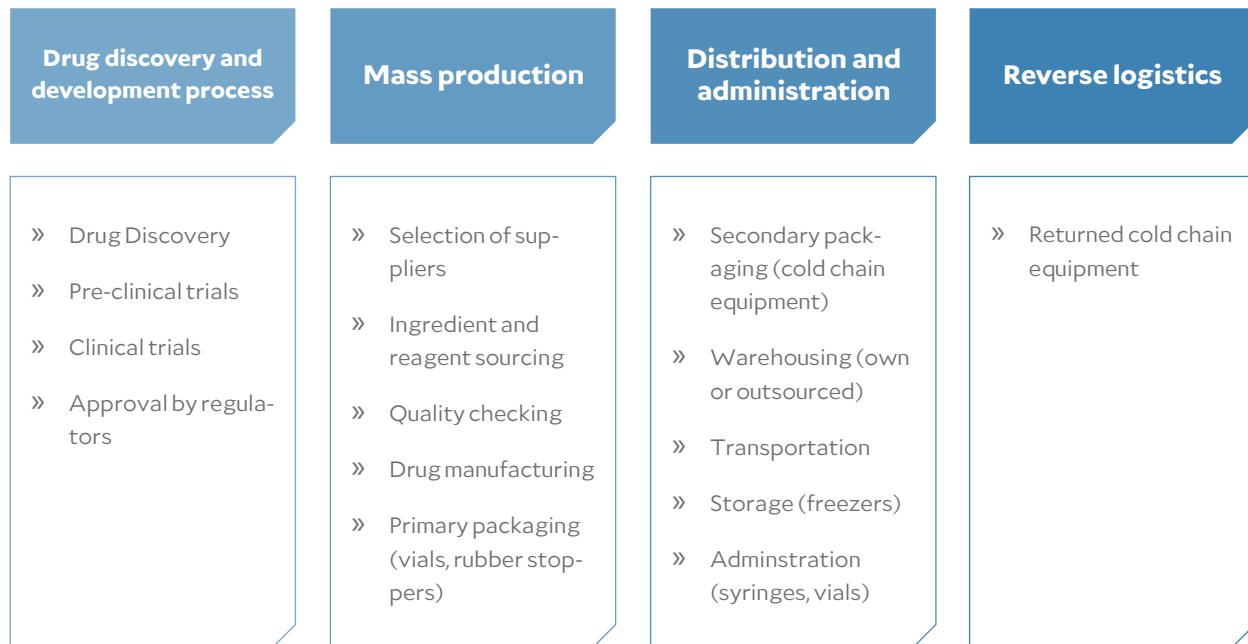
All human vaccine types require multiple doses throughout time to maintain continuous immunity against illnesses

Each category of human vaccines has its own advantages and disadvantages, which can influence the decision of manufacturers regarding their production. With the exception of live attenuated vaccines, all vaccine types require multiple doses or booster shots over time to maintain continuous immunity against diseases. Vaccines containing live germs may not be suitable for individuals with weakened immune systems or certain long-term health conditions. Specific vaccines, like mRNA and live virus vaccines, require constant refrigeration during storage and transportation. Notably, the production process can vary in complexity depending on the vaccine type. Nucleic acid vaccines, such as mRNA vaccines, can be developed and manufactured more quickly compared to other types of vaccines.

Overall, vaccine development is a rigorous and time-consuming process in which safety and efficacy are prioritized at every stage. To bring safe and effective vaccinations to the public, it often takes years of research and collaboration among scientists, regulatory authorities, and manufacturers.

## Human Vaccine Supply Chain:

The vaccine supply chain is a highly organized system that enables smooth and efficient distribution of vaccines to the public, starting from the manufacturing facilities. The entire supply chain typically involves three or four stages, depending on the specific vaccine. These stages include drug discovery, mass production, distribution, and reverse logistics. The diagram below illustrates the different stages of the vaccine supply chain.



\*Note, for illustrative purposes only as the supply chain will differ across different vaccines.

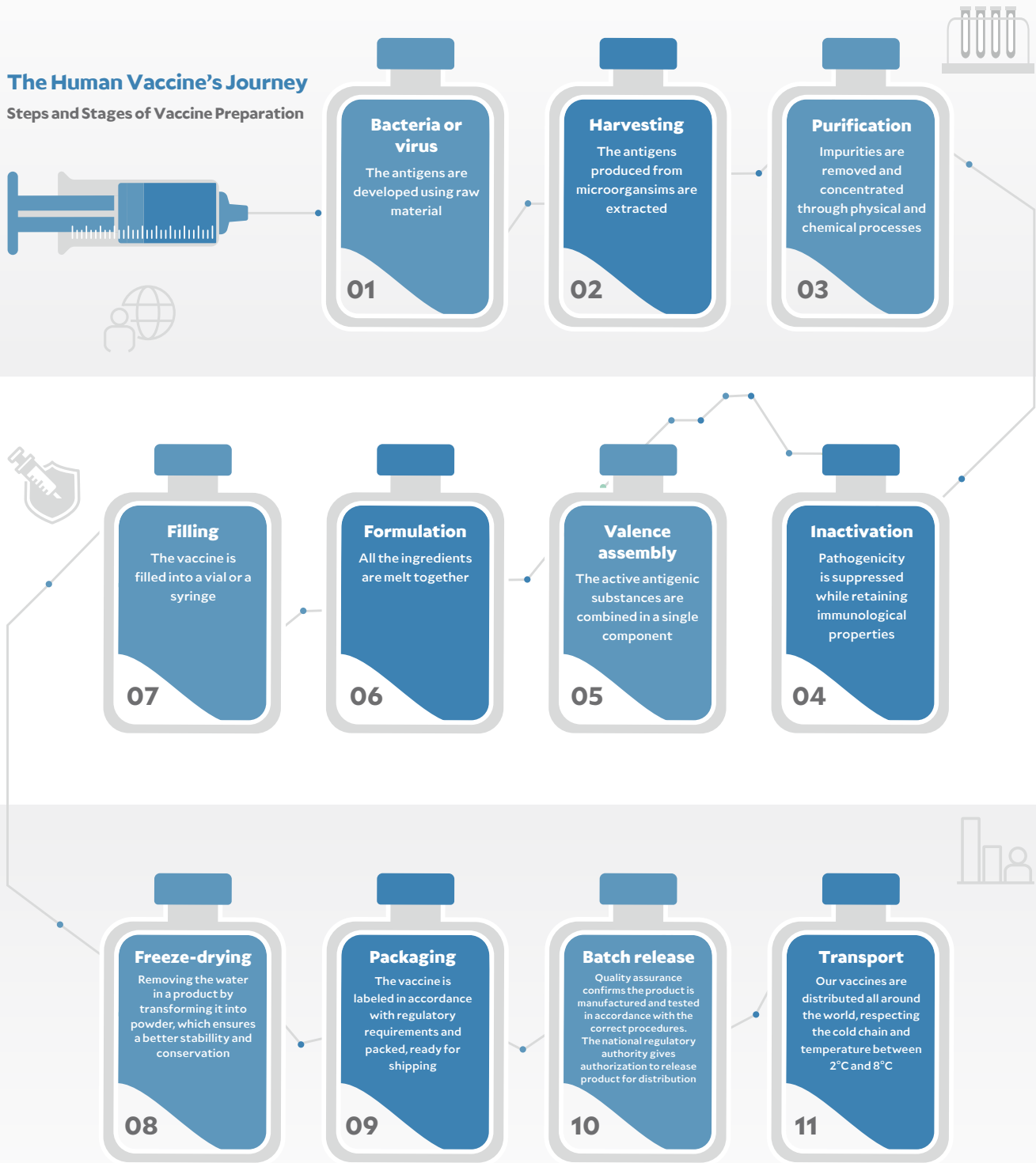
\*\*Source: Organization for Economic Co-operation & Development (OECD) - Manufacturing and distributing vaccines publication.

**The drug discovery and mass production stages require qualified professionals and sophisticated facilities**

Certain vaccines, such as those containing live viruses, may require temperature-controlled storage during transportation. In such cases, a cooling box is used to ensure the integrity of the vaccine. Once the vaccine reaches its intended destination, the cooling box is returned to its original location, marking the reverse logistics stage of the supply chain. This stage involves the retrieval and management of the cooling boxes to maintain the efficiency of the vaccine distribution process.

The various stages of the supply chain for vaccines are often geographically dispersed. While the drug discovery and mass production stages necessitate specialized expertise and advanced facilities, leading to their concentration in specific locations, the distribution stage entails the sourcing of secondary packaging materials, warehousing, storage, and administration items from multiple global sources. The following diagram illustrates the complete journey of a vaccine, encompassing all stages of the supply chain.

**The Human Vaccine's Journey**  
Steps and Stages of Vaccine Preparation



Source: Sanofi "The vaccine's journey" Infographic. <https://sanofi.com>



**529 SAR billion**

The WHO estimated the global human vaccine market in 2021

**30%**

Pfizer market share in 2021

## International Market Highlights:

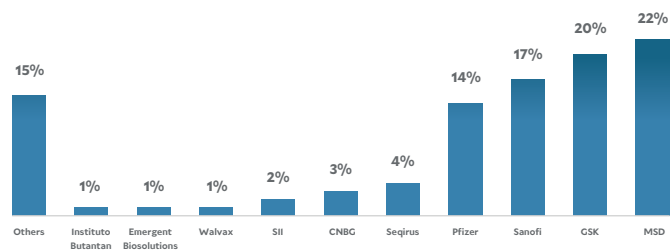
In 2021, the global human vaccine market was estimated by the World Health Organization (WHO) to be valued at SAR 529 billion, with around 16 billion vaccine doses provided. This accounted for 10% of the overall pharmaceutical market, which had a value of SAR 5.29 trillion. If we exclude the COVID-19 vaccine doses, the global vaccine market value decreases to SAR 158 billion, with approximately 5.3 billion doses administered. As a result, the vaccine market represents 4% of the total pharmaceutical market.

Comparing the figures to 2019, the vaccine market showed growth in value. In 2019, it was valued at SAR 143 billion, with 5.8 billion doses administered, and accounted for 4% of the total pharmaceutical market. The differences between 2019 and 2021 can be primarily attributed to a decline in the administration of pediatric vaccines and an increase in the usage of higher-priced adult vaccines.

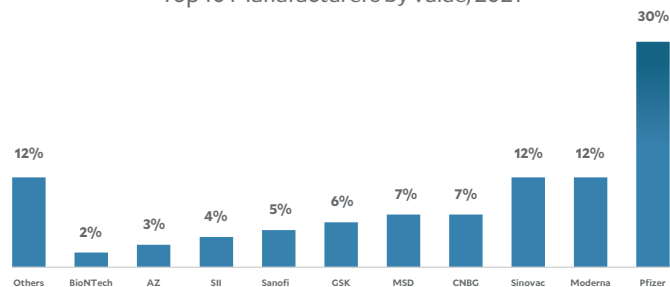
## Global Human Vaccine Market - Major Players

According to the WHO, Pfizer had the largest market share (30%) in 2021, followed by Moderna (12%) and Sinovac (12%). Excluding COVID-19 vaccines alters the vaccine supply landscape, with Merck Sharp & Dome (MSD) gaining the largest market share (22%) followed by GSK (20%) and Sanofi (17%). The top 10 manufacturers by value, including and excluding COVID-19, are shown in the figures below:

Top 10 Manufacturers by value (excluding COVID-19), 2021



Top 10 Manufacturers by value, 2021



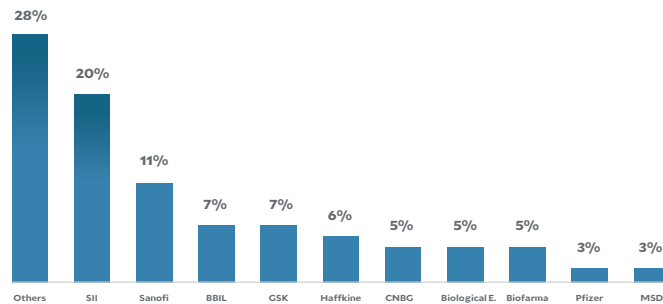
sourced: WHO Vaccine Market Report 2022

**16%**

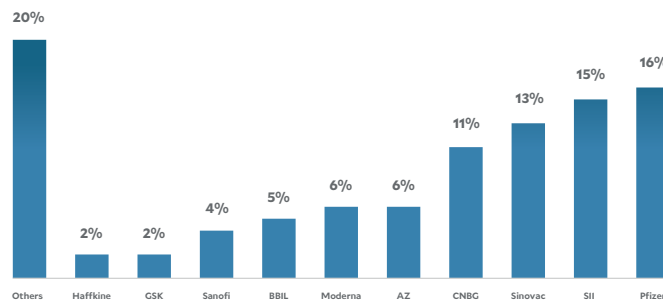
Pfizer was also the leading manufacturer by volume in 2021

Pfizer was also the leading manufacturer by volume (16%) in 2021, followed by Serum Institute of India (SII) (15%) and Sinovac (13%). Excluding the volume of the COVID-19 vaccine, places SII as the top manufacturer by volume (20%) followed by Sanofi (11%), Bharat Biotech (BBIL) (7%) and GSK (7%). The top 10 manufacturers by volume, including and excluding COVID-19, are shown in the figures below:

Top 10 Manufacturers by volume (excluding COVID-19), 2021



Top 10 Manufacturers by volume, 2021



sourced: WHO Vaccine Market Report 2022

Excluding COVID-19 vaccines, the top manufacturers in terms of both value and volume are Serum Institute of India (SII), China National Biotechnology Group (CNBG), Sanofi, GSK, Merck Sharp & Dome (MSD), and Pfizer. These manufacturers have consistently maintained their positions in the top 10 since 2019 and continue to dominate the global market in terms of market value and volume. Despite the emergence of new players in the global vaccine market during the COVID-19 pandemic, the industry remains highly concentrated and reliant on a small number of manufacturers.

**94 manufacturers**

were distributing vaccines to WHO Member States

Out of the 94 manufacturers distributing human vaccines to WHO Member States, the majority were located in the WHO Western Pacific region (41%), followed by the WHO European region (21%), and the WHO Americas region (17%). However, the Eastern Mediterranean region, which includes 22 countries including Saudi Arabia, had a significantly lower number of manufacturers, accounting for only 7% of the total 94 manufacturers.



Saudi Arabia's human vaccine landscape is completely dominated by multinational vaccine manufacturers, with only a single local production facility

## KSA Market Highlights:

The human vaccine industry in Saudi Arabia is predominantly controlled by multinational vaccine manufacturers, with only one local production facility. In 2021, Sanofi, GlaxoSmithKline (GSK), and Pfizer held a combined market share of over 90% in the country, with Sanofi and GSK alone accounting for 70% of the market. This aligns with the global vaccine market, where the top five vaccine producers hold 77% of the market share.

In the Saudi Arabian vaccine market in 2021, the combined market value of the top five most requested vaccines accounted for 83% of the total, and these vaccines are the pneumococcal conjugate vaccine (PCV), meningococcal conjugate vaccine (MCV), rotavirus vaccine (RV), varicella zoster vaccine (VZV), and the diphtheria, tetanus, pertussis, polio, haemophilus influenzae type b, and hepatitis b (DTaP/IPV/Hib/HepB) vaccine.

### GlaxoSmithKline (GSK)

In 2021, GSK supplied over 76% and 97% of total dose demand (by value) for RV and VZV, respectively

# 3%

Saudi vaccine market is estimated to grow by a CAGR of 3% in the next five years

The vaccines listed above are included in the national immunization schedule of the Ministry of Health (MOH). These vaccines are sourced from global pharmaceutical companies such as GlaxoSmithKline (GSK), Sanofi, and Pfizer as they are imported into Saudi Arabia.

In 2021, a significant majority of the requested doses for RV and VZV vaccines, accounting for 76% and 97% respectively in terms of value, were supplied by GSK. Similarly, Sanofi provided 99% of the requested doses for MCV vaccine and 95% for DTaP/IPV/Hib/HepB vaccine. Additionally, Pfizer supplied over 99% of the requested doses for PCV vaccine. These statistics demonstrate that Saudi Arabia heavily depends on international pharmaceutical companies to meet its vaccination demands for the national immunization program.

As the occurrence of new and previously known infectious diseases increases worldwide, there is a growing anticipation for higher demand for human vaccines. This can be attributed to factors such as increased travel and higher population density in many areas, which contribute to the spread of these diseases. Additionally, there is an expected rise in the demand for region-specific vaccines, including halal variations. Gelatin, which is derived from the boiling of animal skin and bones, including cows, is commonly used in certain vaccines as a stabilizing agent. However, in halal vaccines, gelatin sourced from bovine animals is used as a substitute for non-halal ingredients.

Due to the expanding population in the Kingdom of Saudi Arabia, there is an expected increase in the demand for vaccines in the local market. The population in Saudi Arabia has grown by approximately 1.2% between mid-2020 and mid-2021, according to the General Authority for Statistics (GAS). This demographic shift may result in a greater requirement for pediatric vaccinations to cater to the needs of the growing population. It is estimated that the vaccine market in Saudi Arabia will witness a compound annual growth rate (CAGR) of 3% over the next five years.

Human Vaccine	2023	2024	2025	2026	2027
Demand (SR thousands)	1,858,738	1,914,500	1,971,935	2,031,093	2,092,026



In the Kingdom, the Saudi Food and Drug Authority regulates human vaccine selling prices

Multinational companies that produce human vaccines often adopt a tiered pricing approach, where the pricing of vaccines is determined based on the income level and financial capacity of different countries. This means that the same vaccine may be sold at a higher price to wealthier countries and at a lower price to developing countries. In the Kingdom of Saudi Arabia, the selling prices of human vaccines are regulated by the Saudi Food and Drug Authority (SFDA).



The National Unified Procurement Company is responsible for sourcing and purchasing medication and medical devices in the Kingdom

Vaccines are priced on a per-dose basis and the price may vary depending on factors such as the type of vaccine, the income group of the purchasing country, the procurement method, and the terms of the contract. In the Kingdom of Saudi Arabia, the National Unified Procurement Company (NUPCO) is responsible for sourcing and purchasing medications and medical devices. Regarding the top five most sought-after vaccines in the country, the cost per dose is provided in the table below. It is important to note that most vaccines require multiple doses to achieve immunity in an individual.

Vaccine Type	Vaccine name	Type	Price	Manufacturer
MCV	MENACTRA	Vial	246	SANOFIPASTEUR
VZV	VARILRIX	Vial	167	GLAXOSMITHKLINE
RV	ROTARIX	Pre-filled syringe	182	GLAXOSMITHKLINE
DTaP/IPV/Hib/HepB vaccine	HEXAXIM	Vial	173	SANOFIPASTEUR
PCV	PREVENAR 13	Pre-filled syringe	246	PFIZER

Source: SFDA Drug List

To be eligible to operate in Saudi Arabia, all local factories must first meet the “Good Manufacturing Practice” criteria

The Saudi Food & Drug Authority (SFDA) is in charge of overseeing and supervising the human vaccine industry in Saudi Arabia. SFDA has implemented numerous laws and regulations to regulate this sector. Local factories are required to meet the “Good Manufacturing Practice” standards in order to be permitted to operate in Saudi Arabia. Additionally, human vaccines must obtain Market Authorization Approval from SFDA before they can be sold and distributed in the Saudi market.

Saudi Arabia is actively working towards establishing local production of human vaccines. On July 6th, 2023, the Arab Company for Pharmaceutical Products (Arabio), Sanofi, and Lifera (a biopharmaceutical company owned by the Public Investment Fund (PIF)) entered into a Memorandum of Understanding (MOU) with the aim of developing local vaccine manufacturing capacity. According to the MOU, Lifera will serve as a contract manufacturer for Sanofi and Arabio, while Tamer Group (a significant shareholder of Arabio) will handle local and regional vaccine distribution needs.

In May 2023, SaudiVax, a biopharmaceutical company based in Saudi Arabia, entered into a partnership with the Human Resources Development Fund (HRDF) to develop a biomanufacturing training program. The objective of this program is to equip individuals with the necessary knowledge and skills to pursue careers in the biopharmaceutical industry. The training program commenced in June 2023 and has recently been accredited by the Saudi Commission for Health Specialties (SCFHS).



As part of the Vision 2030 strategy, the Kingdom aims to localize 40% of drug production

## Challenges:

In light of the global impact of the COVID-19 pandemic, numerous nations, including Saudi Arabia, have acknowledged the significance of establishing domestic capacities for manufacturing human vaccines. As an integral part of its Vision 2030 strategy, the Kingdom aims to increase the localization of drug production from the existing 35% to 40%. The focus will be on prioritizing the production of routine vaccines for children and other highly sought-after medications.

The vaccine manufacturing industry poses significant challenges, as even the most rudimentary steps involved in producing vaccines that are safe, effective, and consistent throughout their lifespan can be immensely difficult to execute. The effectiveness of a vaccine can vary greatly due to a multitude of factors, including the inherent biological variations in the starting materials, the characteristics of the microorganism itself, the environmental conditions during microbial cultivation, the expertise of the manufacturing technician, and the intricacies of the purification processes. Furthermore, regulatory bodies not only approve specific vaccines but also examine and authorize the entire manufacturing, testing, and release procedures associated with those vaccines. Even a minor alteration in the production process can have profound implications on the final product, impacting its purity, safety, or effectiveness. The compounded complexity arising from biological and physical variability sets vaccine manufacturing apart from the production of conventional small molecule pharmaceuticals. Consequently, the number of successful and thriving vaccine manufacturers remains low despite the global demand for various vaccines remaining unmet.

**Vaccine R&D and manufacturing requires a large initial investment and is considered a risky investment**

Establishing a vaccine production facility presents several challenges on the commercial, technological, and regulatory fronts. Firstly, specialized equipment, clean rooms, and containment rooms are essential requirements for such facilities. However, there is a global shortage of personnel possessing the precise combination of skills, expertise, knowledge, competence, and suitable personalities to effectively operate vaccine production lines. While countries like Brazil, China, and India have made notable progress in this regard, many developing nations face limitations in their educational systems, resulting in a scarcity of qualified candidates. Consequently, vaccine manufacturers in these countries often rely on expatriate staff to ensure uninterrupted production. To successfully build a vaccine manufacturing plant, it becomes imperative to address these challenges through appropriate means.

- » Vaccine R&D and manufacturing requires a large initial investment and is considered a risky investment as only a small fraction of developed vaccines receive regulatory approval.
- » Vaccine development, research and registration can take several years and therefore realization of costs requires time.
- » Vaccine pricing must strike a balance between accessibility and profitability. There must be a willingness from government and non-government organizations to subsidize vaccine costs to ensure successful commercialization.
- » Stringent regulatory requirements, including World Health Organization (WHO) prequalification and local regulations combined with quality assurance (QA)/quality control(QC) requirements, are significant drivers of cost and require well-trained staff that can adapt to any regulatory changes.
- » Certain vaccines require precise temperature control throughout the supply chain which introduces logistical challenges especially in remote or resource limited areas.
- » Vaccine supply chain is vulnerable to disruption as various stages of the supply chain are carried out in different geographical regions.
- » Public perception, misinformation and hesitancy can affect vaccine demand and acceptance.

**Any new investor in the vaccine industry should have a broader vision for the future and encourage & support R&D**

Two potential solutions have been proposed to address these challenges. The first option is to establish local vaccine production plants in collaboration with international vaccine companies through strategies such as in-licensing or joint venture partnerships. This approach would help overcome barriers related to expensive vaccine discovery, research, and development. An alternative approach involves initially setting up local plants as downstream manufacturing facilities, specifically for the filling and finishing stages of the vaccine production process. The aim of this approach is to foster collaboration between local plants and reputable pharmaceutical companies. It also encourages local facilities to gain expertise in running a factory that meets the requirements of both upstream and downstream supply chains for vaccines. To ensure the success of these strategies, new investors in the vaccine industry should adopt a broader vision for the future and actively support research and development efforts. The potential rewards of developing a new molecule or formulation in the vaccine field can be significant, but it requires patience, substantial investments, and comprehensive research to achieve the desired goals.

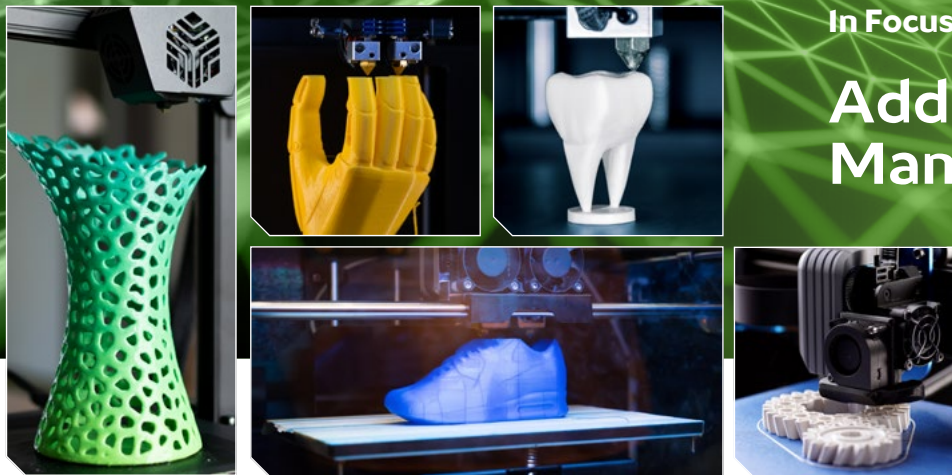


09

In Focus:

# Additive Manufacturing





**In Focus:**  
**Additive Manufacturing**

## Introduction

Additive Manufacturing (AM), also known as 3D Printing, is the technique of creating objects by joining materials based on 3D model data. Unlike subtractive manufacturing methods like CNC, where material is removed to shape an object, AM builds objects layer by layer. Over the past four decades, AM technology has undergone significant advancements, including various sub-technologies that have brought about improvements in speed, quality, and commercial viability.

The AM market has accelerated its development in the last 10 years demonstrating 24% Year-On-Year (YOY) growth and totaling ~15.3 Bn USD market size in 2021.<sup>(1)</sup> The market size is projected to be 363.6 Bn USD by year 2040 registering an annual growth of 18% on an average.<sup>(2)</sup>

Growth was the motive for the innovation and development of additive manufacturing technology, which resulted in joining of a number of companies, and the increase of retail market for this technology in the chain value of the AM.

It is worth mentioning that Additive Industry can be categorized into 4 segments, primarily the materials, equipment, services, and software. The industry experts have sub-categorized these segments and then classified by industry usage. However, for the uniformity of this report, we have emphasized on the 4 main segments.

## History

The first additive manufacturing system can be traced back to the work of Dr. Hideo Kodama in the 1980s, from there, additive manufacturing has taken off, branching out into several different types of technologies. In 1984, Charles Hull patent the first 3D printing technology known as SLA. Thus, commercialized availability of additive manufacturing and 3D printing for manufacturers was born. Following the release of the first 3D printer, inventors and creators began researching new methods and techniques such as SLS and SLM in the early 1990s.

(1) Source: Wohlers Report, 2022

(2) Source: Additive Manufacturing Study, McKinsey & Co 2022

## Global Supply & Demand

The global Additive Manufacturing supply chain includes players:

 **17%** Materials

 **22%** Systems

 **54%** Services

 **7%** Software

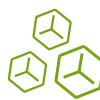
While the majority of users primarily utilize additive manufacturing for prototyping purposes, a significant trend is emerging. Over 18% of companies are now employing AM for direct manufacturing, including the production of end products and components. This growing adoption indicates the increasing acceptance and maturation of the technology.


Presently, Additive Manufacturing encompasses five major sectors: healthcare, aerospace, consumer products, oil & gas and power, and automotive. These industries have shown remarkable progress in adopting AM technology, with a multitude of applications. According to the technology adoption cycle, AM is projected to enter the phase of commercial scaling in the coming years, and its growth is anticipated to accelerate compared to previous phases, eventually reaching its plateau of productivity around 2040.


The global Additive Manufacturing supply chain includes players that supply materials (17% market share), systems (22% market share), services (54% market share), and software (7% market share).<sup>(4)</sup> However, most of the main players are covering multiple elements of supply, and the trend is to further enhance integrated offerings in order to capture a larger market share.


To support the 2040 market size, supply will need to scale at the appropriate cost and quality.

Description	Materials	Equipment	Services	Software	Total
<b>Demand</b> (Bn USD)	58.2	64.4	205.8	21.6	350
<b>Supply</b> (Bn USD)	60.5	66.9	213.8	22.4	363.6
<b>Gap/Surplus</b> (Bn USD)	2.3	2.5	8.0	0.8	13.6
<b>Growth</b> (P.A)	18%	17%	19%	18%	18%

 **Materials**  
The anticipated growth rate is projected to be 18% CAGR<sup>(4)</sup>, primarily driven by the increased utilization of larger scale final production and the adoption of advanced high-end products.

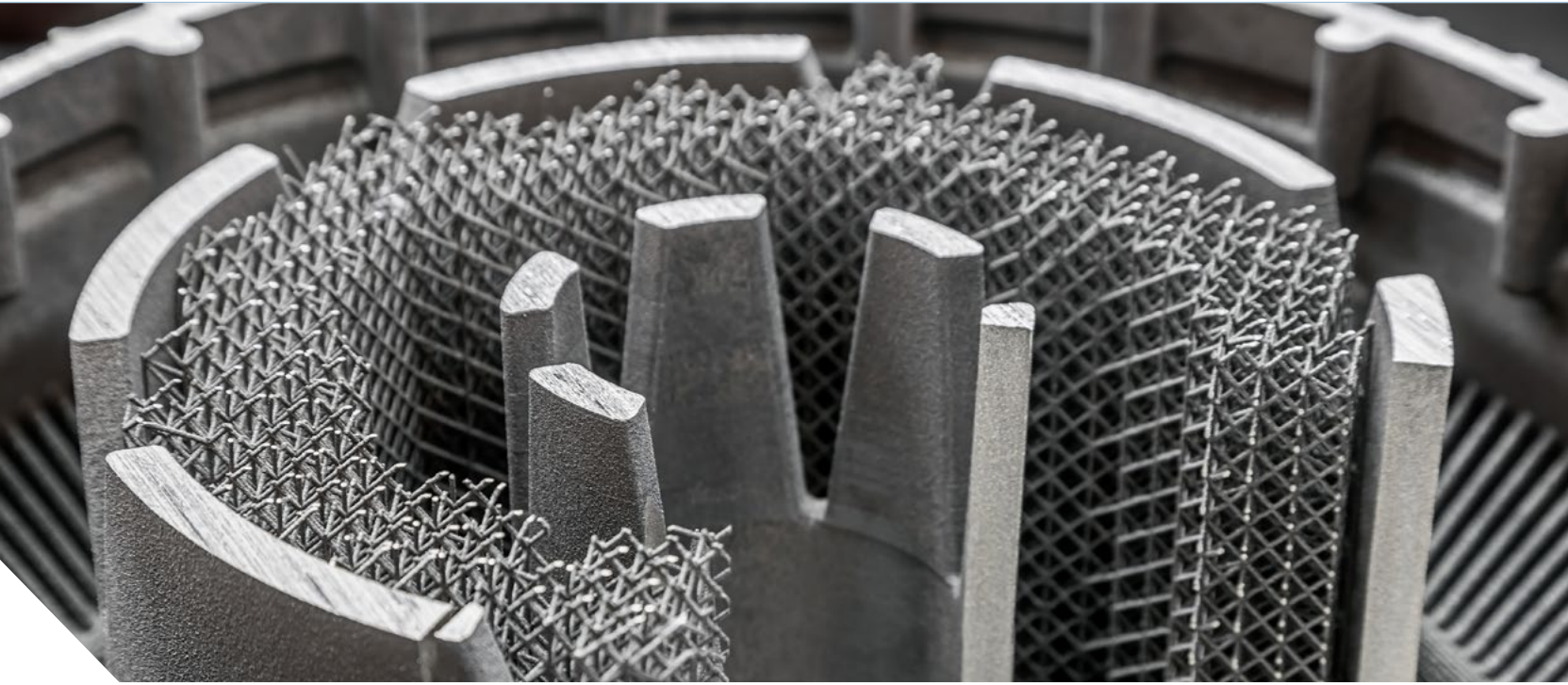
 **Equipment**  
growth is expected to be at 17% CAGR<sup>(4)</sup>, smaller base of potential first time buyers. Strongest demand is expected in industrial scale machines.

 **Services**  
growth is expected to be at 18% CAGR<sup>(4)</sup>, growth in larger scale final production and demand for outsourced service (avoid capex) growing share of services.

 **Software**  
growth is expected to be at 19% CAGR<sup>(4)</sup>, in line with industry. Growth potential in integrated software offering.

(3) Source: Based on McKinsey & Co. 900 Companies Surveys, 2019

(4) Source: Markets&Markets, Wohlers Report, 2022



## The future of Additive Manufacturing in the Kingdom of Saudi Arabia



In line with Vision 2030, the National Industry Strategy (NIS)<sup>(5)</sup> and the objectives of the National Industrial Development and Logistics Program (NIDLP), the Ministry of Industry and Mineral Resources (MIMR) aims to develop an additive manufacturing (AM) ecosystem that will enable the establishment of additive manufacturing businesses within the Kingdom’s expanding existing players to generate more avenues within the Kingdom to foster the growth of the domestic market and create additional opportunities.









In the Kingdom of Saudi Arabia, the supply market predominantly revolves around service providers, while the presence of material supply and equipment is relatively limited, there are ample prospects for KSA to broaden its value chain and cater to both the domestic and international markets, thereby capitalizing on the potential within the services sector.

(5) Source: National Industry Strategy (NIS)


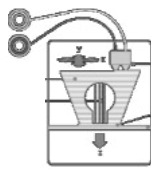

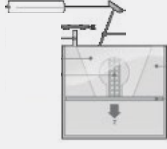

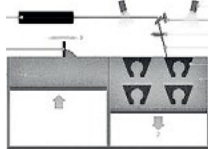

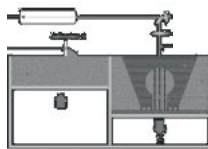

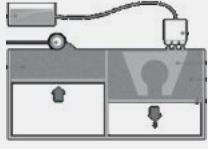

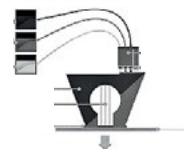

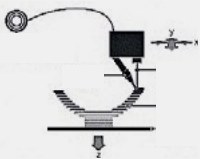

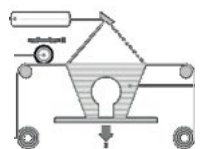
## Types & Processes

Based on the printed material; being liqued, powder or connected filament, the Additive Manufacturing can be categorized into seven types/processes.

Selecting the right process comes down to aligning the advantages and limitations of each technology to the application's most important requirements. Properly utilizing the available 3D printing technologies will reduce design risk and, ultimately, result in better products.

Process	Acronyms	Feedstock	Polymer	Metal
 Extrusion	FFF, FDM, BMD	Filament, rod, pallets	✓	✓
 Photopolymerization	SLA, DLP, CLIP	Liquid	✓	✓
 Powder Bed Fusion (Polymer)	SLS, HSS, MJF	Powder	✓	
 Powder Bed Fusion (Metal)	SLM, DMLS, EBM	Powder		✓
 Binder Jetting	BJ, 3DP	Powder		✓
 Material Jetting	MJ, Polyjet, Multijet	Liquid	✓	✓
 Directed Energy Deposition	DED, LENS, EBAM	Wire, powder		✓
 Sheet Lamination	LOM, UAM	Sheet	✓	✓








Source: MIT, AM Process Comparisons, 2021

Process	Explanation	Machine
 <p data-bbox="343 425 437 457">Extrusion</p>	<p data-bbox="652 393 1057 489">Material is selectively dispensed through a nozzle or orifice, where is typically heated to soften or melt the material.</p>	
 <p data-bbox="343 617 536 649">Photopolymerization</p>	<p data-bbox="693 585 1015 680">Liquid photopolymer in a vat is selectively cured by light-activated photopolymerization.</p>	
 <p data-bbox="343 787 520 851">Powder Bed Fusion (Polymer)</p>	<p data-bbox="669 787 1040 851">Focused thermal energy selectively fuses regions of a powder polymer bed.</p>	
 <p data-bbox="343 968 520 1032">Powder Bed Fusion (Metal)</p>	<p data-bbox="669 968 1040 1032">Focused thermal energy selectively fuses regions of a powder metal bed.</p>	
 <p data-bbox="343 1170 470 1202">Binder Jetting</p>	<p data-bbox="669 1149 1040 1212">Droplets of build material are selectively deposited.</p>	
 <p data-bbox="343 1351 495 1383">Material Jetting</p>	<p data-bbox="652 1298 1057 1436">A liquid bonding agent is selectively deposited to bind powder materials, typically followed by sintering to densify the bound powder.</p>	
 <p data-bbox="343 1510 495 1574">Directed Energy Deposition</p>	<p data-bbox="677 1500 1032 1596">Focused thermal energy is used to fuse materials by melting as they are being deposited.</p>	
 <p data-bbox="343 1713 503 1744">Sheet Lamination</p>	<p data-bbox="685 1691 1024 1766">Sheets of material are bonded to join consecutive layers of a part.</p>	

Source: MIT, AM Process Comparisons, 2021

# Applications

The National Industry Strategy (NIS) places emphasis on 12 key manufacturing clusters that are of high priority. Advanced Manufacturing (AM) can play a supportive role in enabling the Kingdom to achieve regional and global success. The table below summarizes the utilization of use cases across different sectors as follows:

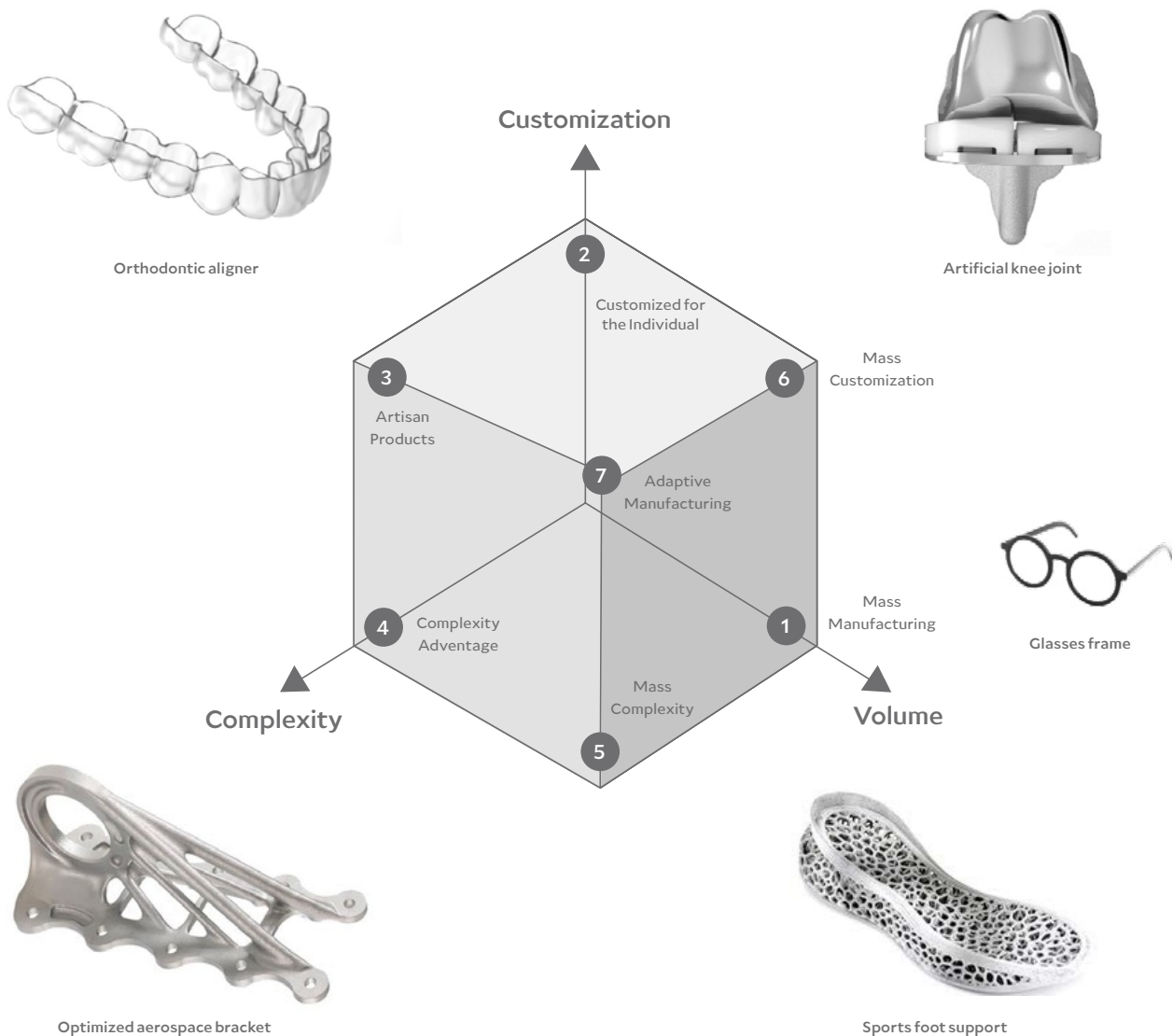
AM prioritized sector	NIS prioritized sector	Use cases
 <b>Healthcare</b>	Medical devices	Orthopedic & cranial implants, dental and prosthetics
	Pharmaceuticals	3D printed drug for epilepsy and personalized medications
 <b>Aerospace</b>	Aerospace	Spare parts, tooling, clips and brackets and interior parts
 <b>Consumer</b>	Food	Traditional food production, tooling & spare parts and 3D printed meat and confectionary
 <b>Power, energy &amp; industrial machinery</b>	Chemicals	Spare parts and tooling
	Renewables	Power storage battery, solar panels and wind turbines
	Machinery & Equipment	Spare parts and tooling
	Metals	Steel, Titanium, Aluminum and Cobalt Chrome alloy
 <b>Automotive</b>	Automotive	Customized parts, electric vehicles and jigs and fixtures
 <b>Architecture &amp; construction</b>	Building Materials	3D printed houses
 <b>Other (non-prioritized sector)</b>	Maritime	Spare parts
	Military	Customized parts and spare parts

Source: National Industry Strategy (NIS)

## Additive Manufacturing Capability Space

These three axes--customization, complexity, and volume (quantity) inform the application potential of a manufacturing process. So, AM can be used in each of the individual points illustrated along these axes at many stages across the product lifecycle.

- » Volume refers to the quantity of products (or parts) that are manufactured.
- » Complexity refers to the level of complexity of the part or product.
- » Customization refers to how specific the product is to the needs of the end user.



Source: MIT, Creating a map of additive manufacturing products and services

## Challenges

Industrial companies worldwide face similar hurdles when it comes to adopting Additive Manufacturing (AM). These challenges can be categorized as knowledge gaps, talent shortages, high initial costs, limited resources, and the need for standardized practices.

The following are crucial focus areas for Additive Manufacturing to tackle the obstacles to its adoption:

- » Enabling AM innovation.
- » Attracting the brightest national and international talent.
- » Growing market awareness of Additive Manufacturing.
- » Enabling full scale 3D printing industrialization.
- » Developing manufacturing and non-destructive testing standards and IP.

## Summary

Additive Manufacturing (AM), also known as 3D printing, is a technology that uses 3D model data to create objects by joining materials together. Over the last decade, the AM market has experienced significant growth, with an annual growth rate of 24% and a market size of around USD 15.3 billion in 2021. Projections indicate that the AM market will continue to expand, with an expected annual growth rate of 18% until 2040.

Additive manufacturing global supply chain encompasses companies that supply materials, equipment, services, and software. In Saudi Arabia, the market primarily focuses on service providers and has a good potential to expand its offerings to both domestic and global markets, thanks to the availability of polymer and equipment suppliers. Additive manufacturing technology finds applications in various sectors such as healthcare, aviation, consumer products, oil and gas, energy, and automotive industries. However, the adoption of additive manufacturing may encounter challenges related to knowledge, skilled talent, cost, resources, and standards.



# 10

## Lending Activity Statistics



**Table (1): Number and Value of SIDF Approved Loans, by Industrial Sector**

Sector	Throughout 2022 (1443 / 1444 H)		Cumulative Total	
	Number	Value (SAR Million)	Number	Value (SAR Million)
Chemical Industries	34	5,411	1382	99,403
Engineering Industries	26	7,665	1235	49,512
Consumer Industries	37	393	1383	27,839
Building Materials Industries	4	32	707	27,260
Other Industries	10	697	197	8,794
<b>Total</b>	<b>111</b>	<b>14,198</b>	<b>4904</b>	<b>212,808</b>

**Table (2): Number and Value of Approved Loans by Regions**

Region	Throughout 2022 (1443 / 1444 H)		Cumulative Total	
	Number	Value (SAR Million)	Number	Value (SAR Million)
Riyadh	40	567	1,762	32,063
Makkah	16	6,550	1,159	44,305
Medina	7	333	245	21,831
Eastern Region	34	1,850	1,314	84,078
Al-Qassim	4	30	123	2,706
Asir	3	25	79	1,347
Tabuk	4	4,782	29	5,644
Hail	1	19	52	2,467
Jazan	1	25	46	13,218
Najran	-	-	34	1,381
Al-Baha	-	-	19	103
Al-Jowf	1	17	26	324
Northern Borders	-	-	15	3,312
Multi Regions	-	-	1	29
<b>Total</b>	<b>111</b>	<b>14,198</b>	<b>4,904</b>	<b>212,808</b>

**Table (3): Cumulative Value of Approved Loans, Classified According to the Industrial Sector (SAR Million)**

Sector	2020	2021	2022
Chemical Industries	92,151	93,993	99,403
Engineering Industries	33,431	41,847	49,512
Consumer Industries	26,820	27,441	27,839
Building Materials Industries	27,159	27,228	27,260
Other Industries	7,931	8,097	8,794
<b>Total</b>	<b>187,490</b>	<b>198,607</b>	<b>212,808</b>

**Table (4): Value of Cumulative Approved Loans, Disbursed, and Repaid Amounts (SAR Million)**

Year	Approved Amounts (SAR Million)	Disbursed Amounts (SAR Million)	Repaid Amounts (SAR Million)
1434/1435H (2013)	112,095	75,592	45,886
1435/1436H (2014)	117,987	81,276	50,346
1436/1437H (2015)	129,425	88,444	54,333
1437/1438H (2016)	137,367	94,821	59,333
1438/1439H (2017)	147,938	102,240	63,631
1439/1440H (2018)	157,378	111,629	68,688
1440/1441H (2019)	169,878	120,840	73,777
1441/1442H (2020)	187,495	125,490	77,051
1442/1443H (2021)	198,607	135,652	83,524
1443/1444H (2022)	212,808	141,974	89,971



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