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# How India is Pulling In European Life Sciences Sector

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**When the world was struggling with COVID-19 in 2020 and 2021, the partnership between Indian and European organizations proved to be a historic accomplishment in the field of global life sciences. It was able to deliver more than two billion doses of the COVID-19 vaccine, which was developed by the University of Oxford and AstraZeneca, both from the United Kingdom, and manufactured by Serum Institute of India (SII) in India, to more than 170 countries starting in November 2020, marking a significant milestone in the global pandemic response. India's economical production in the biopharma industry allowed it to reach this significant milestone. India's advantages, including cost-effective manufacturing, a skilled workforce, and a growing but robust research ecosystem, are making it an attractive destination for outsourcing and joint ventures. These collaborations have led to the development of innovative healthcare solutions and have expanded market access for both Indian and European firms. The India-Europe collaboration in life sciences has evolved into a dynamic partnership fostering innovation, investment, and shared expertise. While significant strides have been made in contract research, vaccine production, and biosimilars, there remains potential for greater collaboration in new drug discovery sciences. As European companies expand their R&D and manufacturing presence in India, the mutual focus on academic research and healthcare resilience positions this partnership as a global leader in life sciences innovation.**

The total global pharma market in calendar year 2023 was $1508 billion and is expected to touch $1544 billion in 2024 registering a growth of 2.4 per cent. North America, the leading region with an expected share of $511.79 billion in 2024 is likely to see an increase of 3.73 per cent over previous year's share of $493.38 billion. Asia Pacific is the leading region in terms of percentage growth of 3.86 per cent in 2024 over the previous year's growth rate of 3.14 per cent with a share of $467.04 billion in 2024 as against $449.69 billion in 2023 and $436 billion in 2022. The European region which recorded a growth rate of 4.95 per cent in 2023 with a share of $410.71 billion in 2023 will witness a flat growth in 2024 as its share will be around $410.71 billion, according to the IQVIA report.

The global generic market that holds 32.65 per cent of the total pharma market as per Fitch Solutions has touched $492.78 billion in 2023. India is predominantly a generic player. Major generic producers in the world besides India, include China producing $100-110 billion, USA producing roughly $ 65-70 billion, Germany producing $ 20-22 billion, Russia producing $14-15 billion. India's generic share in the global generic market is $ 44.78 billion ($21.53 billion exports + $23.25 billion domestic) working out to a percentage share of 9.2 per cent. India's exports of pharmaceuticals during April 2023 till March 2024 has been to the tune of $27.84 billion with a growth of almost 9.66 per cent.

The North American Free Trade Agreement (NAFTA), a trade agreement between the United States, Canada, and Mexico region continues to be the topmost region as an exporting partner for India with share of $9,569.52 million in financial year

2023-24 registering growth of 14.64 per cent over previous year's share of $8,347.24 million. Exports to the region of Europe has grown by 11 per cent and is accountable for more than 20 per cent of India's exports. Europe has a strong and robust pharma industry and in fact, it is the very crucible from which the global modern pharma industry has evolved. Considering this growth, 2371 pharma companies have received Certification of Suitability (CEP) from European regulatory authorities (as of April 2024) and 1943 pharma companies have got accreditation from UK MHRA (The Medicines and Healthcare products Regulatory Agency) and Market authorisations.

This progress has been witnessed due the strong relations between India and European Union (EU) that has a cooperation agreement with India dating from 1994, which allows the setting up of specialised subgroups, including on pharmaceuticals. In 2005, the EU and India adopted a joint action plan for the India-EU strategic partnership, endorsing the establishment of a working group on pharmaceuticals. This working group started its activities in July 2006, with annual meetings ever since.

The European Medicines Agency (EMA) supports India in applying international standards, particularly for good manufacturing practice (GMP) and clinical trial activities, and facilitates capacity building and regulatory contacts. Due to these activities, among the top 10 Indian pharmaceutical export destinations five are from the European region namely UK (second), Netherland (fourth), France (fifth), Belgium (seventh) and Germany (eighth).

Taking the advantage of these agreements at the government levels, the European companies have been investing in R&D and manufacturing facilities, as well as opening Centres of Excellence (CoEs) and Global Capability Centres (GCCs) in India. Through these approaches, leading European pharmaceutical and biopharmaceutical companies are actively expanding their footprint in India. Their strategies include fostering research and development (R&D), investing in Contract Research Organisations (CROs) and Contract Development Manufacturing Organisations (CDMOs), and establishing partnerships to enhance large-scale production capabilities. These collaborations focus on areas like healthcare innovation, digital health, biotechnology, vaccine production, biosimilars, and biologics manufacturing, essential for global healthcare resilience.

Many European companies have not only been sourcing products from Indian manufacturers for years, but have been now setting up their own production facilities in India. As many pharma companies turn to more collaborative business models, India having strong IT talent and skill sets in areas like artificial intelligence (AI), machine learning (ML), cloud computing, IoT, big data, analytics and many new areas is likely to play an increasingly important partnering role.

In July 2024, Sanofi, a French multinational pharmaceutical and healthcare company announced a €400 million ($437 million) investment in its GCC in Hyderabad, while Denmark's Novo Nordisk, in October 2024, partnered with AI startups and expanded its leadership team, planning an increase in its workforce by 2025 to handle vast clinical trial datasets. UK-based AstraZeneca is investing Rs 250 crore to expand its GCC in India, underscoring its commitment to leveraging India's talent pool and enhancing its global operations.

It may be noted that Sandoz, a Swiss company that focuses on generic pharmaceuticals and biosimilars and now the generics arm of Novartis, has two manufacturing plants and a research centre for developing formulations and processes, based in Thane. GlaxoSmithKline (GSK), a British multinational pharmaceutical and biotechnology company has facilities based in Mumbai and Nashik. The GSK operates in India through its subsidiary, GlaxoSmithKline Pharmaceuticals Ltd, offering a range of prescription medicines and vaccines across various therapeutic areas. GSK has a longstanding presence in India, contributing to the healthcare sector through its products and initiatives. Roche, the Swiss pharmaceutical firm has entered into promotion, marketing, and distribution partnerships with Indian companies Cipla and Entero. These collaborations aim to improve access to Roche's oncology, rheumatology, immunology, and nephrology medicines in India. Mid-tier global pharma companies are present as well – Lonza, and Ethypharm all have manufacturing or research facilities in India.

**Healthcare Innovation and Digital Health**

The rapidly expanding technological infrastructure in India is creating a strong base for enabling global pharma companies to enhance their operations, drive innovation, and achieve cost efficiencies, earning India a significant competitive advantage. The country's robust IT infrastructure supports various aspects of operations, including R&D, data management, and digital health initiatives. For instance, Swiss giant Roche is harnessing India's robust technology ecosystem to forge ahead in the digital landscape, crafting innovative solutions that resonate on a global scale. Roche has been actively collaborating with India's life sciences industry to enhance healthcare access and innovation.

Roche has expanded its digital pathology open environment through strategic collaborations aimed at supporting pathologists and scientists in cancer research and diagnosis by leveraging cutting-edge AI technologies. Roche initiated its first Digital Center of Excellence in India, in Pune early 2024 - a co-location for Roche Information Solutions, Roche Diagnostics Solutions R&D, and Roche Informatics teams encompassing a diverse team of professionals from data engineers and

software engineers to architects and user-experience professionals working to build cutting edge products in digital healthcare. Roche Information Solutions India evolved from Roche's 2017 acquisition of Viewics', a startup with its engineering centre in Pune. To cite a similar example, AstraZeneca's Global Innovation & Technology Centre (GITC) in Chennai drives the company's digital journey and technology innovation, housing over 50 per cent of its global IT staff. GITC offers services in software engineering, cybersecurity, IT infrastructure, cloud, hyper-automation, AI/ML, extended reality, and IoT. To this end, in July 2024, AstraZeneca India Private Limited (AZIPL), the GCC of AstraZeneca, announced an investment of Rs 250 crore ($30 million) to expand its GITC, which includes close to 1,300 roles focused on driving innovation, enhancing efficiency, and streamlining operations across the company globally.

In July 2024, the Startup Incubation and Innovation Centre (SIIC), the technology business incubator of the Indian Institute of Technology Kanpur (IITK), entered into an agreement with Boehringer Ingelheim India, a leading global pharmaceutical company, to foster a partnership for fostering healthcare innovations. Boehringer Ingelheim's grant supports Manastik Technologies, an SIIC-incubated startup focused on developing India's inaugural tele-neurorehabilitation app for multidisciplinary dementia care and diagnosis, focussing on the unmet need for comprehensive mental health strategies to address the growing burden of dementia and other mental health disorders in India. Using DADT (Dementia Application and Diagnosis & Tracking) technology, Manastik caters to the dementia ecosystem by providing those in need with personalised help curated by experienced doctors and neurohealthcare professionals. Boehringer has pledged a grant to Manastik to validate their app, raise awareness, and conduct dementia screening campaigns nationwide in India. Boehringer Ingelheim India has also signed an MoU with RED.Health ambulance services, the emergency care expert, to strengthen emergency pre-hospital stroke care services in India. This collaboration aims to advance emergency healthcare and support timely, life-saving medical interventions, advancing stroke care and adding value to the Stroke Care Eco-system in the country.

Bengaluru-based Ayush Hospital Soukya is set to embark on its first global expansion since its inception in 2002. Addressing the growing global demand for integrative medicine, Soukya will establish its first international unit in Portugal with an investment of Rs 220 crore. The state-of-the-art residential medical institute, expected to be operational by late 2027, will offer its unique treatment approach combining traditional, time-tested natural systems of medicine such as Ayurveda, Homeopathy, Yoga, Naturopathy, and other complementary therapies for treating various chronic and lifestyle conditions.

**Biotechnology**

When we look at the biotechnology space, Merck Life Science in India has signed a Memorandum of Understanding (MoU) with GeNext Genomics, an emerging biotech company. This collaboration creates a unique competitive edge by combining local expertise with global biomanufacturing capabilities. By partnering with Merck for their world-class expertise in biomanufacturing, Genext Genomics can now offer comprehensive solutions that support the growth of India's biotech ecosystem. Bengaluru-based SKAN Research Trust (SKAN), promoted by Indian entrepreneur Ashok Soota, has announced a joint research project with the UK-based Wellcome Sanger Institute and the University of Newcastle, to study early somatic mutations in blood stem cells that researchers believe drive several cancerous and non-cancerous conditions. SKAN Research Trust, and UK-based Quadram Institute Bioscience have announced a collaborative initiative to apply the cutting-edge TraDIS-Xpress platform to study the action of traditional medical compounds on bacteria, thereby aiding in the reformulation and development of novel antibacterial regimens. TraDIS-Xpress is Quadram's proprietary genetic sequencing platform that is at the forefront of efforts to uncover new antimicrobial agents and develop better prebiotics and probiotics for health promotion.

On the other hand, in an innovative initiative aimed at propelling healthcare innovation forward, the Technology Development Board (TDB) from Department of Science & Technology (DST), Government of India has granted Rs 75 lakh to Peptris Technologies Pvt. Ltd. and the Foundation for Neglected Disease Research (FNDR), Bengaluru in March 2024 for a project "ANAGRANINF - Development of a Novel Class of Antibiotics Against Gram-Negative Bacterial-Infections." The project is a joint effort between Indian and Spanish companies, with ABAC Therapeutics Sl serving as the Spanish Project Lead.

Miltenyi Biotec, a global biotechnology company headquartered in Germany announced a few strategic collaboration/partnership plans aligning with the Indian industry last year. The German company partnered with the Faridabad-based Translational Health Science and Technology Institute (THSTI) in July 2024. This collaboration aims to enhance research and development in cell and gene therapy, focusing on cancer and sickle cell disease. The partnership encompasses capacity building, technology transfer, training programmes, and joint research initiatives to translate scientific advancements into medical therapies. Earlier in 2024, Miltenyi Biotec also signed an MoU with BIRAC, a public sector enterprise under the Department of Biotechnology (DBT). This agreement is designed to facilitate the development of chimeric antigen receptor (CAR) T-cell therapies and other CGT services in India.

The collaboration focuses on making advanced therapies more accessible and affordable by promoting local development and manufacturing, aligning with India's 'Made in India' initiative in the CGT sector. These strategic initiatives underscore

Miltenyi Biotec's interests in advancing biomedical research and therapy in India through collaboration with local institutions and investment in state-of-the-art facilities. The company plans to catalyze the development of CAR T-cell therapies, with the prospect of implementing centralised and point-of-care CAR T-cell treatments across Indian hospitals. This initiative aligns with Miltenyi Biotec's goal to bring new therapies to patients with high unmet medical needs. These strategic initiatives underscore Miltenyi Biotec's dedication to fostering innovation and collaboration within India's life sciences sector, aiming to enhance healthcare outcomes through advanced cell and gene therapies.

In October 2024, the International Centre for Antimicrobial Resistance Solutions (ICARS) from Denmark has signed a partnership with the Centre for Cellular and Molecular Platforms (C-CAMP), under the aegis of the India AMR Innovation Hub (IAIH), to address the growing threat of Antimicrobial Resistance (AMR) across the One Health spectrum. As part of this partnership, ICARS will provide funding support over the next five years, along with technical expertise and a network for implementation research in collaboration with C-CAMP, aligning with India's National Action Plan on AMR (NAP 2.0). Additionally, ICARS and C-CAMP will work together to mobilise further funding to expand their efforts and create a wider impact. This collaboration can be deemed as a cluster-to-cluster collaboration, between the two independent research and knowledge centres.

**CROs and CDMOs**

Besides biotechnology, we witnessed partnerships between India and the EU in CRO and CDMO sectors during last year. Akums Group, a Delhi-based CDMO, has announced a strategic long-term agreement with a globally renowned pharmaceutical company to manufacture and supply pharmaceutical formulations in the European market. Under this collaboration, Akums Group will produce and supply multiple SKUs of oral liquid formulations, which the partner company will market across various European countries.

Veeda Lifesciences (earlier called Veeda Clinical Research), an Ahmedabad-based full-service CRO, has acquired Heads, a privately held European CRO, which specialises in conducting clinical trials in oncology. The acquisition provides Heads with a strong operational platform and an opportunity to expand its expertise and capabilities to the Indian and South-East Asian markets. India's diverse demographic profile provides a unique opportunity to conduct clinical trials, especially in therapeutic areas including oncology, diabetes, hypertension, infectious diseases, and special diseases. With this acquisition, Veeda's global pharmaceutical and biotech clients can now leverage the unique and unparalleled suite of early to late-phase CRO services across Europe, the US, and Asia Pacific. Piramal Pharma Solutions, the CDMO business under Piramal Pharma Limited (PPL), with operations in North America, Europe and Asia announced the opening of an expanded ADC manufacturing facility in Scotland; The commissioning of the facility represents the culmination of a £45 million investment.

Mumbai-based Blockchain-As-A-Service company Qila.io has partnered with global clinical research centre Mascot Spincontrol to bring about transparency in clinical research through blockchain. The collaboration aims to ensure that clinical trial data is secure, transparent, and tamper-proof so that the integrity of research outcomes is maintained. Mumbai-based Mascot Spincontrol is a clinical research centre formed through a joint venture between Mascot Universal and Spincontrol France. The European Company KrKA and Laurus Labs announced a joint investment of Rs 2000 crore in Genome Valley, a high-technology business district located in Hyderabad, for the establishment of finished pharmaceutical products and biopharmaceutical manufacturing in the cluster.

Roche has partnered with Cipla to promote, market, and distribute its oncology and rheumatology/immunology drugs in India. This collaboration aims to improve access to treatments for complex diseases. In collaboration with Entero, Roche focuses on the nephrology segment, ensuring wider availability of its nephrology drugs across the Indian market.

**Vaccines**

The collaboration is not restricted to CRO and CDMO sectors, but externed to vaccine areas as well. France-based Valneva SE, a specialty vaccine company, and Pune-based Serum Institute of India (SII) announced an exclusive license agreement for Valneva's single-shot chikungunya vaccine that enables the supply of the vaccine in Asia. The companies will work urgently to bring the vaccine to the Indian market, and certain other Asian countries, subject to local regulatory approvals. Under the agreement, the companies will conduct a technology transfer of the current drug product manufacturing process.

Besides, SII is joining a growing Coalition for Epidemic Preparedness Innovations (CEPI) network of vaccine producers in the Global South to support more rapid, agile, and equitable responses to future public health disease outbreaks. The addition of SII to the Norway-based CEPI manufacturing network will be a significant boost to vaccine production efforts in Global South regions and will mean the world is better prepared to achieve the 100 Days Mission to develop new vaccines against known

or novel infectious diseases within three months of a pandemic threat being recognised.

India’s global pharma leader Dr. Reddy’s Laboratories has entered into an exclusive partnership with Sanofi Healthcare India to promote and distribute their vaccine brands across private markets in India. Under the arrangement, Dr. Reddy’s will have exclusive rights to promote and distribute Sanofi’s well-established and trusted paediatric and adult vaccine brands Hexaxim, Pentaxim, Tetraxim, Menactra, FluQuadri, Adacel, and Avaxim 80U.

**Academic research-driven collaborations**

The collaboration and partnerships are not restricted to firms but extended to research and academic institutions as well. Horizon Europe, the European Union's flagship research and innovation program for the period 2021-2027, designed to address global challenges and enhance Europe's competitiveness, has established several partnerships with Indian academic and research institutions to promote collaboration in life sciences. Joint projects are aimed to focus on developing rapid vaccine manufacturing pipelines, addressing AMR, and enhancing preparedness for future pandemics. The primary goals of Horizon Europe in the context of EU-India collaboration in life sciences include advancing healthcare research, enhancing researcher mobility and co-funding, and promoting joint research initiatives to tackle global health challenges, including disease prevention, diagnostics, and treatment.

Facilitating the exchange of researchers and innovators between the EU and India to foster knowledge sharing and capacity building is an important factor of the Horizon Europe initiative. For example, Indian researchers are eligible for Marie Sk?odowska-Curie Actions (MSCA) fellowships, which support mobility and training for researchers at all career stages. This facilitates Indian researchers' participation in European research projects and vice versa. Indian institutions like Council of Scientific and Industrial Research (CSIR), DBT, and DST are participating in a co-funding mechanism to fund and develop joint research projects and healthcare innovation.

In August 2024, the CSIR in India and the European Union launched a co-funding initiative under the MSCA Staff Exchanges, part of the EU’s Horizon Europe programme. This scheme enables CSIR institutes to engage in joint research projects with European partners, facilitating the secondment of scientific and technical staff to European research organisations for knowledge-sharing and collaborative activities. The funding, available from 2025 to 2027, aims to promote balanced researcher mobility and foster long-term collaborations between India and Europe.

Initiated and funded by the French government, the 'Franco-Indian Campus in the Field of Life Sciences for Health' project brings together over 60 French and Indian universities, research institutions, labs, hospitals, startups, and corporates to jointly develop and deliver higher education and research programmes in life sciences for health. The campus aims to become a hub for cutting-edge research, development, and innovation across the 'One Health' paradigm, addressing global health challenges through a multidisciplinary approach. The initiative saw collaborations/partnerships in the past year including several notable Indian educational research institutes like IIT-Delhi, IISER, Asoka University, VIT Vellore, JIPMER Pondicherry, CIMAP Lucknow, NCBS, and Indian Institute of Science (IISc), Bangalore. And, in a nutshell, these Indo-French collaborative initiatives based in the past one to two years, and continuing into the upcoming year aim to address societal needs and tackle global health challenges by advancing the training of individuals and fostering innovation -

1. Establish a multidisciplinary Franco-Indian virtual campus to address evolving societal needs by integrating research in fundamental biology with engineering, chemistry, physics, applied mathematics, bioinformatics, and social sciences.
2. Tackle global health challenges, such as infectious diseases, neurodegenerative disorders, and cancers, through complex, multidisciplinary approaches encompassing genomics, neurosciences, ecology, and social sciences.
3. Foster innovation via the ILIADE platform, which focuses on analyzing the pharmaceutical properties of plants using advanced techniques like artificial intelligence and offers specialized academic programs in medicinal plants and AI applications for health data.
4. Advance research and training in molecular biology and therapeutic innovation by leveraging cutting-edge tools in bioinformatics and artificial intelligence.

On similar lines, in November 2024, University College London (UCL) and the Indian Institute of Science (IISc), Bengaluru, launched a new phase of their strategic partnership to expand innovative work in healthcare. The collaboration focuses on co-creating significant new research capabilities in areas such as digital health, quantum technology, artificial intelligence, and medicine. The partnership includes plans for collaborative PhDs, faculty exchanges, and research fellowships, aiming to train future physicians and advance healthcare solutions.

A partnership between the European Molecular Biology Organisation (EMBO) and India’s DBT offers Indian researchers access to EMBO funding schemes, enhancing opportunities for the Indian scientific community. EMBO and DBT are conducting a nationwide dissemination exercise to raise awareness about these schemes. The CSIR has multiple exchange

agreements with DAAD, Germany, enabling annual scientist visits and fostering collaboration.

India has bilateral Science & Technology (S&T) cooperation agreements with 83 countries, actively collaborating with 44 nations, including the EU, France, Germany, and the UK. Three bi-national S&T Centers operate under intergovernmental agreements with France, Germany, and the USA. The Indo-French Centre for Promotion of Advanced Research (IFCPAR/CEFIPRA) facilitates integrative collaborations across Indian science ministries, and the Indo-German Science & Technology Centre (IGSTC) focuses on advanced industrial research partnerships and developing joint knowledge pools to address global challenges. India is engaging in numerous bilateral agreements to promote biomedical research, with partnerships including the Indian Council of Medical Research (ICMR).

**No Turning Back**

India has signed many agreements with countries of the European Union on a bilateral basis and in consortium. India has been working on a Trade and Economic Partnership Agreement (TEPA) with European Free Trade Association (EFTA) countries comprising Switzerland, Iceland, Norway & Liechtenstein. India- EFTA signed a TEPA in March last year. TEPA will give impetus to “Make in India” and Atmanirbhar Bharat by encouraging domestic manufacturing in the pharmaceutical sectors, among others.

Complementing the above scenario, it is worth mentioning that India's advantages, including cost-effective manufacturing, a skilled workforce, and a growing but robust research ecosystem, are making it an attractive destination for outsourcing and joint ventures. These collaborations have led to the development of innovative healthcare solutions and have expanded market access for both Indian and European firms.

The collaboration between India and Europe in the life sciences sector has emerged as a cornerstone for global healthcare innovation, offering significant advancements in therapeutics, vaccines, and biologics. Over recent years, this partnership has expanded across academic research, contract research and manufacturing, and healthcare resilience efforts, fostering mutual growth and international progress. India and Europe have established robust collaborations in the life sciences sector through academic research partnerships as well. These collaborations encompass joint research initiatives, funding schemes, and institutional partnerships aimed at advancing scientific knowledge and addressing global health challenges.

The India-Europe collaboration in life sciences has evolved into a dynamic partnership fostering innovation, investment, and shared expertise. While significant strides have been made in contract research, vaccine production, and biosimilars, there remains potential for greater collaboration in new drug discovery sciences. As European companies expand their R&D and manufacturing presence in India, the mutual focus on academic research and healthcare resilience positions this partnership as a global leader in life sciences innovation.

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