

Report on research collaborations in India

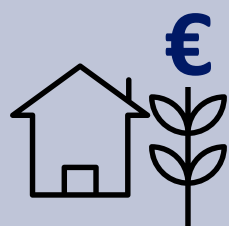
Impact

Executive summary

Novo Holdings



Between 2018 and 2022, Novo Holdings invested in 2 companies based in India.

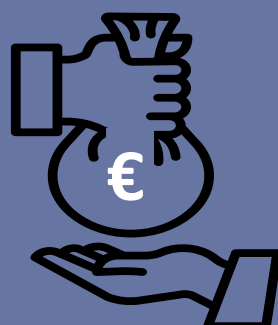


In 2022, the Novo Holdings portfolio included 2 Indian companies with approximately 400 employees

Novo Nordisk Foundation



Between 2018 and 2022, the Novo Nordisk Foundation (NNF) financed 5 projects with Indian applicants, totaling US\$ 3.75 million.



10 young Indian researchers have been awarded a grant to attend the Copenhagen Bioscience Conferences.

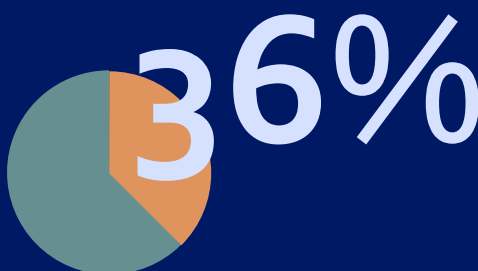
Grant recipients

30

The Foundation's grant recipients collaborates with many international project's partners, including 30 Indian based universities and university hospitals.



Between 2018 and 2022, NNF grant recipients collaborated with 12 Indian companies. 4 are in the biotechnology sector, and 1 of the companies have less than 50 employees.



Between 2018 and 2022, Indian grant recipients have published 110 journal articles. 50% of these are among the top 10% most cited in their field.

4/25

4 out of 25 top Indian universities collaborate with NNF grantees

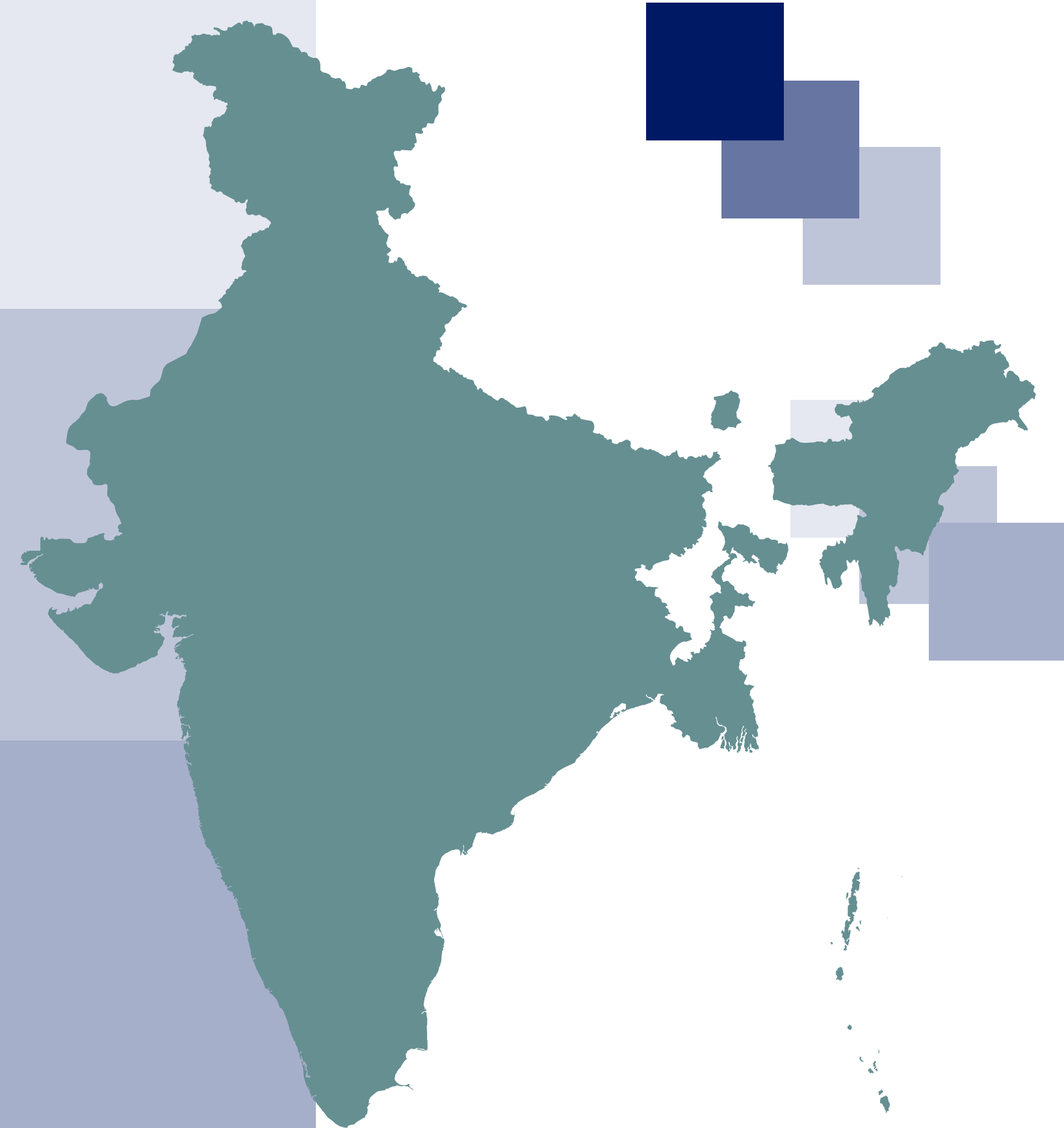
Introduction

This report is presented in two parts;

- Activities that Novo Nordisk Foundation (NNF) grant recipients have with institutions or organisations in India.
- An overview of Novo Holdings' investments in India.

This report showcases NNF's contribution to the Indian academic community and industry.

Through figures and case studies, it demonstrates the different kinds of relationships and activities between NNF grant recipients and Indian academic and industry partners. Data in the presentation are based on activities between 2018 and 2022 (inclusive).



Novo Nordisk Foundation



The history of the Novo Nordisk Foundation



The Novo Nordisk Foundation dates back to 1922, when Nobel laureate August Krogh returned home from the United States and Canada with permission to produce insulin in the Nordic countries. This marked the beginning of the development of world-class diabetes medicine in Denmark and the establishment of several foundations that, many years later, merged into today's Novo Nordisk Foundation.

1952 – the **Novo Foundation** was established as the owner of the Novo Terapeutisk Laboratorium.

1989 – the Novo Foundation and the Nordisk Insulin Foundation were merged into **Novo Nordisk Foundation** as part of the merger between the two firms Novo Terapeutisk Laboratorium and Nordisk Insulinlaboratorium in Novo Nordisk A/S.

In 2022 the **Novo Nordisk Foundation** awarded 695 grants with a total amount of US\$ 1.1 billion.

For more information, please see the [Impact Report 2022](#)

1922 – the **Nordisk Insulin Foundation** was established as the owner of the Nordisk Insulinlaboratorium. The founders agreed that the profit from the sale of diabetes medicine should be used for scientific and humanitarian purposes.

The Novo Nordisk Foundation is an independent Danish enterprise foundation



Facts about the Novo Nordisk Foundation

3

The world's
third largest
measured in grants

1

The world's
largest
measured in assets:

US\$ 92 billion*

2022 in numbers

Awarded DKK
7.5 billion
US\$ 1.1 billion

Paid out DKK
5.2 billion
US\$ 743 million

695
Grants awarded

3,070
Applications
received

18%
Success rate for
research applications
among open calls

Investment result 2022
3.1 DKK billion
US\$ 443 million

*Preliminary numbers year-end 2022

Our vision to improve people’s health and the sustainability of society and the planet is pursued through a three-pronged mission

Improving the lives of people by progress research and innovation in prevention and treatment of cardiometabolic and infectious diseases



Theme 1: Preventing cardiometabolic disease



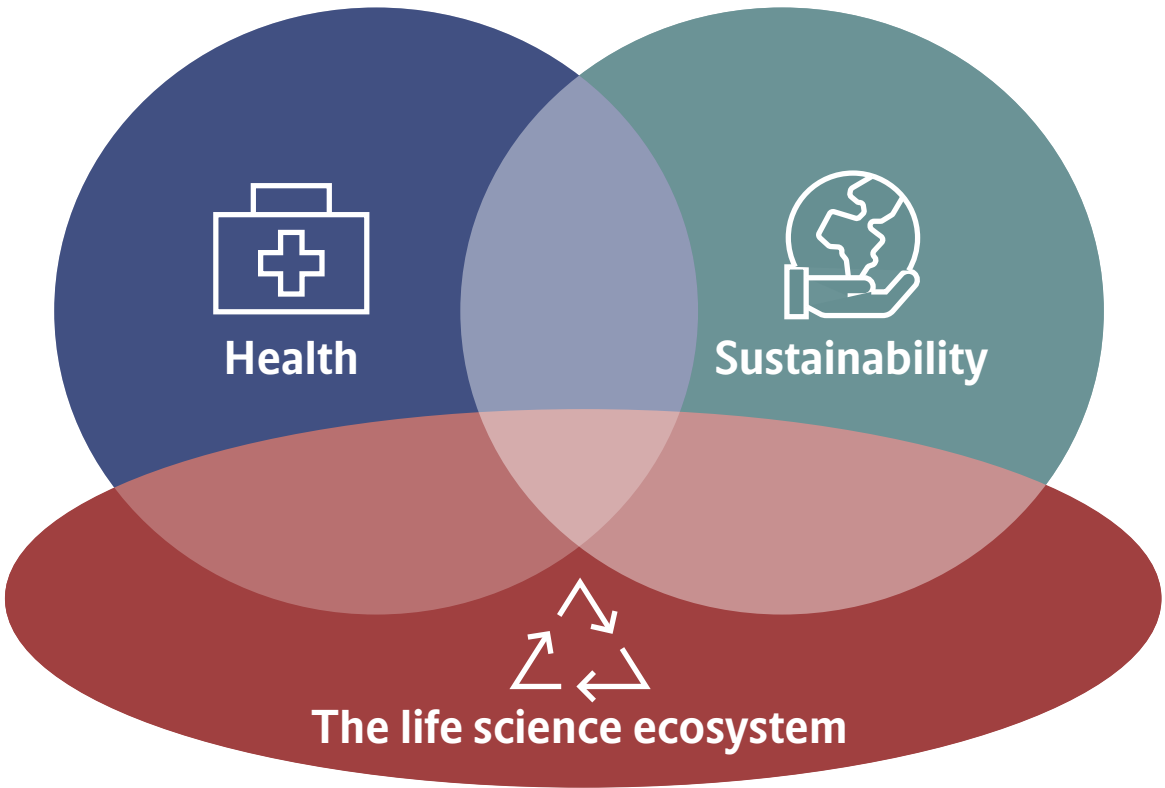
Theme 2: Understanding and managing cardiometabolic disease



Theme 3: Fighting inequity in health



Theme 4: Strengthening epidemic preparedness



Improving the sustainability of society by advance knowledge and solutions to support the green transition in society



Theme 1: Sustainable and high-yield agriculture



Theme 2: Sustainable food for healthy diets



Theme 3: High-impact climate change mitigation technologies



Theme 4: Supporting society in the green transition

Invest in scientific research, education and innovation to enable a world class life science ecosystem



Theme 1: Fundamental research



Theme 2: Enabling research infrastructures and technologies



Theme 3: Translational capacity and societal impact



Theme 4: Education and science capital



Indian academic and
industry collaborations
involving NNF grant
recipients 2018-2022

5 projects funded by NNF include Indian researchers as applicants

The Novo Nordisk Foundation has in the last five years (2018-2022) funded 5 projects that have had 5 main applicants from India. The total funding allocated to these projects is US\$ 3.75 million.

All funded projects are categorized as Social & Humanitarian and awarded as standalone grants.

The Copenhagen Bioscience Conferences are a series of scientific conferences within biomedicine and biotechnology. They bring together some of the world's top researchers and young talent to discuss the latest scientific results and topics within their field. The purpose of the conferences is to enable participants to build an international network and to exchange knowledge and ideas.



Since 2014, **10** young Indian researchers have been awarded a grant to attend the Copenhagen Bioscience Conferences for young research talent.

“An opportunity that facilitate high level training for PhD students and postdocs”

NNF applicant, 2015

NNF Grant recipients' collaborations with Indian partners

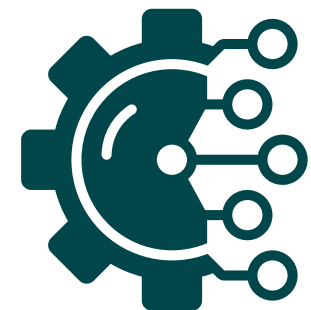
Between 2018 & 2022...



The Foundation's grant recipients have collaborated with many international project's partners, including **79** collaborations between Danish and Indian partners.



30 of those partners are universities and university hospitals.



12 Indian companies co-authored at least one scientific article with grant recipients from the Novo Nordisk Foundation.

Case stories

Emergency hospitals as a result of the COVID-19 situation



NNF grants US\$ 1,5 million for the establishment of four emergency hospitals and a number of mobile hospital units with a total of 364 beds and the capacity to treat close to 1.300 COVID-19 patients per week. The project has been organized in collaboration with the Indian Government represented by the Principal Scientific Adviser's Office, which coordinates the foreign emergency support.

Strengthening public health education in India



In 2022, NNF funded several grants with the goal of strengthening public health education in India. US\$ 0.55 million was granted for a center of excellence for the education of health professionals. Furthermore, US\$ 0.68 million was granted with the goal of supporting health equity and reach through innovation in education.

NNF Grant recipients’ collaboration with top Indian universities

Top Indian universities collaborate with NNF grant recipients

1	Aligarh Muslim University
2	Jamia Millia Islamia
3	Thapar Institute of Engineering and Technology
4	Guru Nanak Dev University
5	Vellore Institute of Technology
6	Panjab University
7	Institute of Chemical Technology
8	Indian Institute of Technology Indore
9	Indian Institute of Technology, Dhanbad
10	Indian Institute of Technology, Roorkee

Source: Novo Nordisk Foundation, CWTS Leiden Ranking 2022
Note: Universities are ranked according to their score on PPtop10%

Institute of Chemical Technology

- Number of co-authored publications : **1**
- Number **7** on the 2021 Leiden Ranking for India

Academy of Higher Education

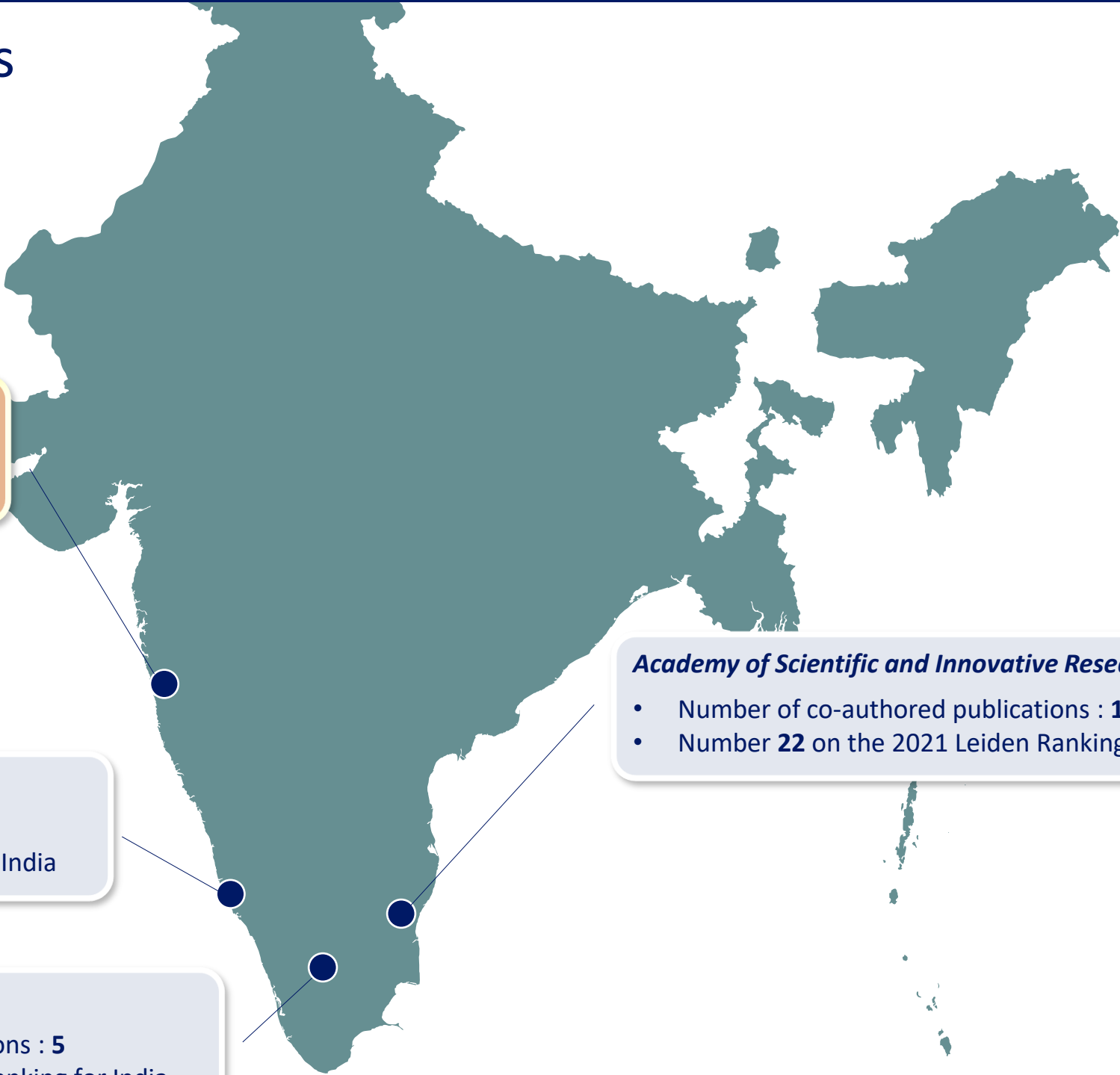
- Number of co-authored publications : **1**
- Number **23** on the 2021 Leiden Ranking for India

Indian Institute of Science

- Number of co-authored publications : **5**
- Number **13** on the 2021 Leiden Ranking for India

Academy of Scientific and Innovative Research

- Number of co-authored publications : **1**
- Number **22** on the 2021 Leiden Ranking for India



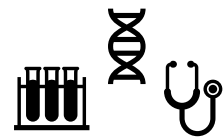
Publication collaborations between NNF grant recipients and Indian partners



Between 2018 and 2022, NNF grant recipients have co-authored **110** publications with researchers located in India.



The highest number of Indian partners come from Bombay Hospital and Medical Research Centre (7 publications) followed by Sree Chitra Tirunal Institute of Medical Sciences and Technology (7 publications) and Indian Institute of Technology Madras (6 publications).



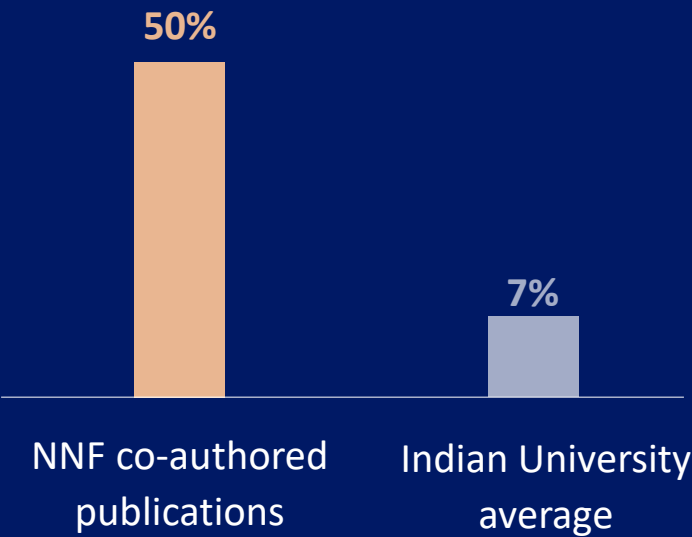
47.5% of the co-authored publications are within the research areas *Medicine* and *Biochemistry, Genetics & Molecular Biology*.



50% of the co-authored publications are within the top 10% most cited publication in their research field. The national average among the top Indian universities is 7%.

NNF grants contribute to research excellence

Share of co-authored publications among the top 10% most cited world-wide in the same research field and year

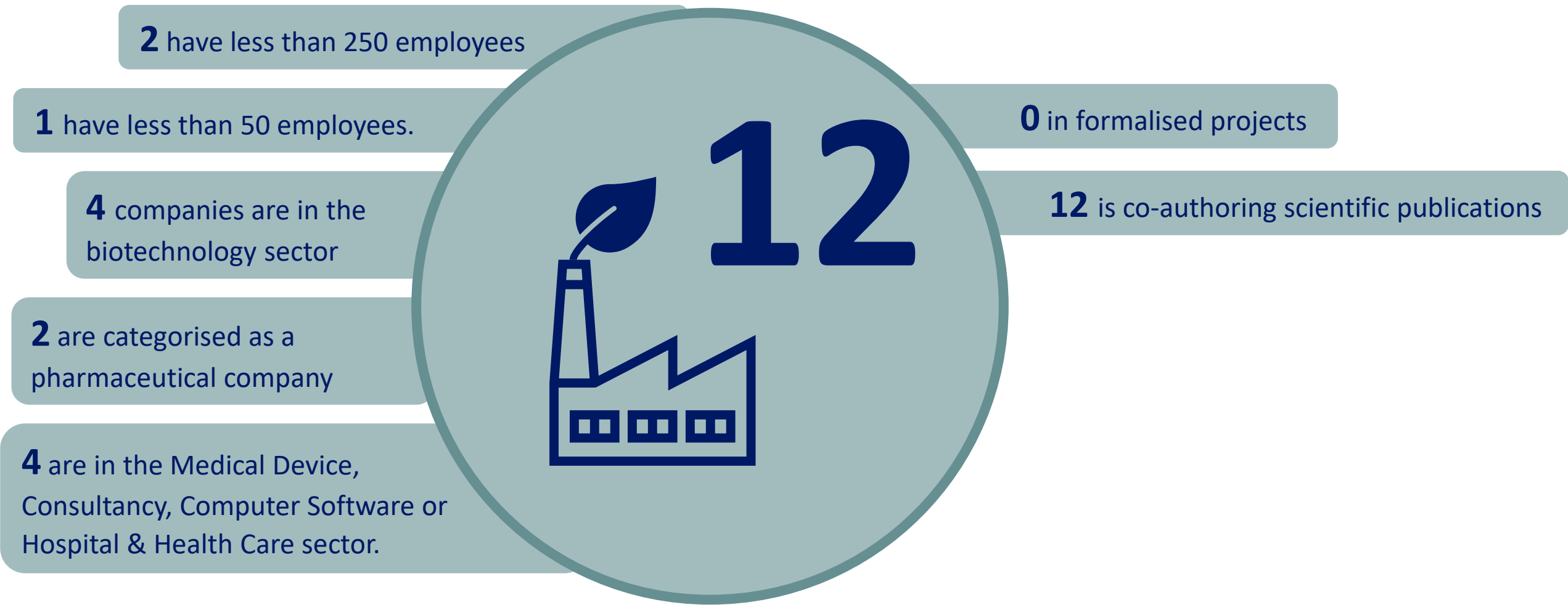


NNF to support crucial education of health professionals in India and East Africa with up to US\$ 140 million

With the launch of the Partnership for Education of health Professionals (PEP), NNF takes a step towards reducing inequity in health by initially targeting the education of health professionals in underserved regions in India and East Africa. NNF will, together with various local partners, support the education of health professionals in improving the prevention and care of noncommunicable diseases, particularly cardiometabolic diseases such as diabetes and hypertension. The partners will include health authorities, universities and educational institutions. PEP is expected to run until 2030.

Researchers receiving grants from the Novo Nordisk Foundation collaborate with Indian companies

In total 12 companies collaborate with NNF grant recipients



The NNF Dashboard on Grants and Impact

The NNF Dashboard is your gateway to information about the entire value chain of grant development, starting with Calls & Applications, through to awarded grants and their impact. In addition to visualising numbers on awarded grants, gender distribution of grant holder and grant recipients host institutions, the NNF Dashboard provides insights and details on the overall development year-to-year.

For more information please visit

<https://novonordiskfonden.dk/facts-and-figures/>





Novo Holdings A/S in India

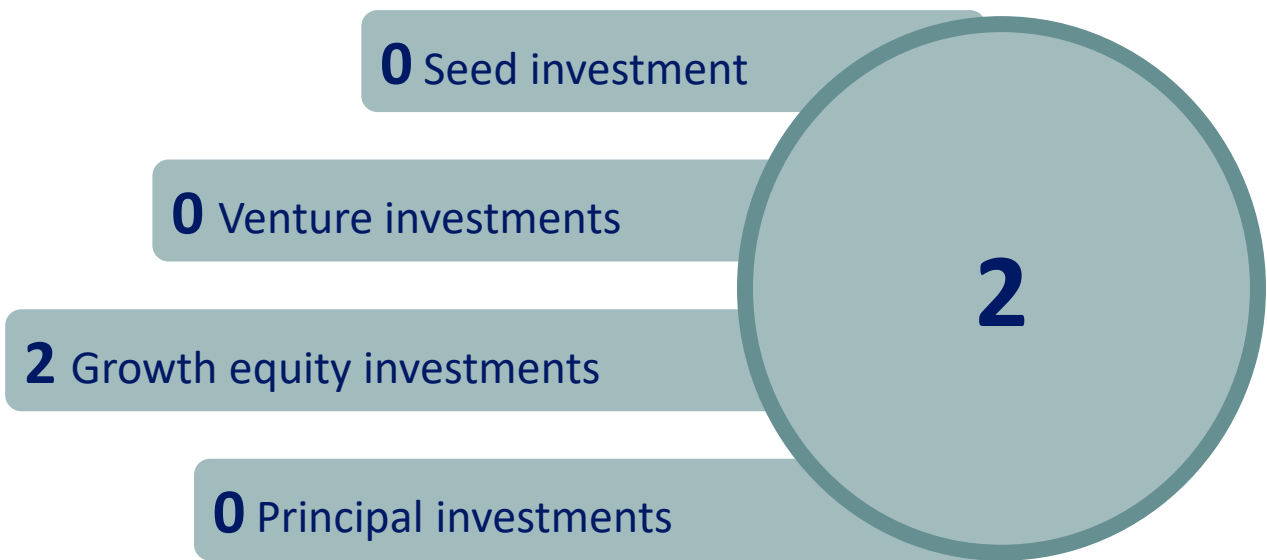
Our mission

Novo Holdings is to be a supportive owner of the Novo Group companies and to make a growing and positive impact on health, science and society by generating attractive long-term returns on the assets of the Novo Nordisk Foundation.

Novo Holdings A/S Investments in India

Novo Holdings A/S has in the period 2018-2022 invested in **2 Indian companies**. In 2022, the portfolio included 2 companies with approximately 400 employees.

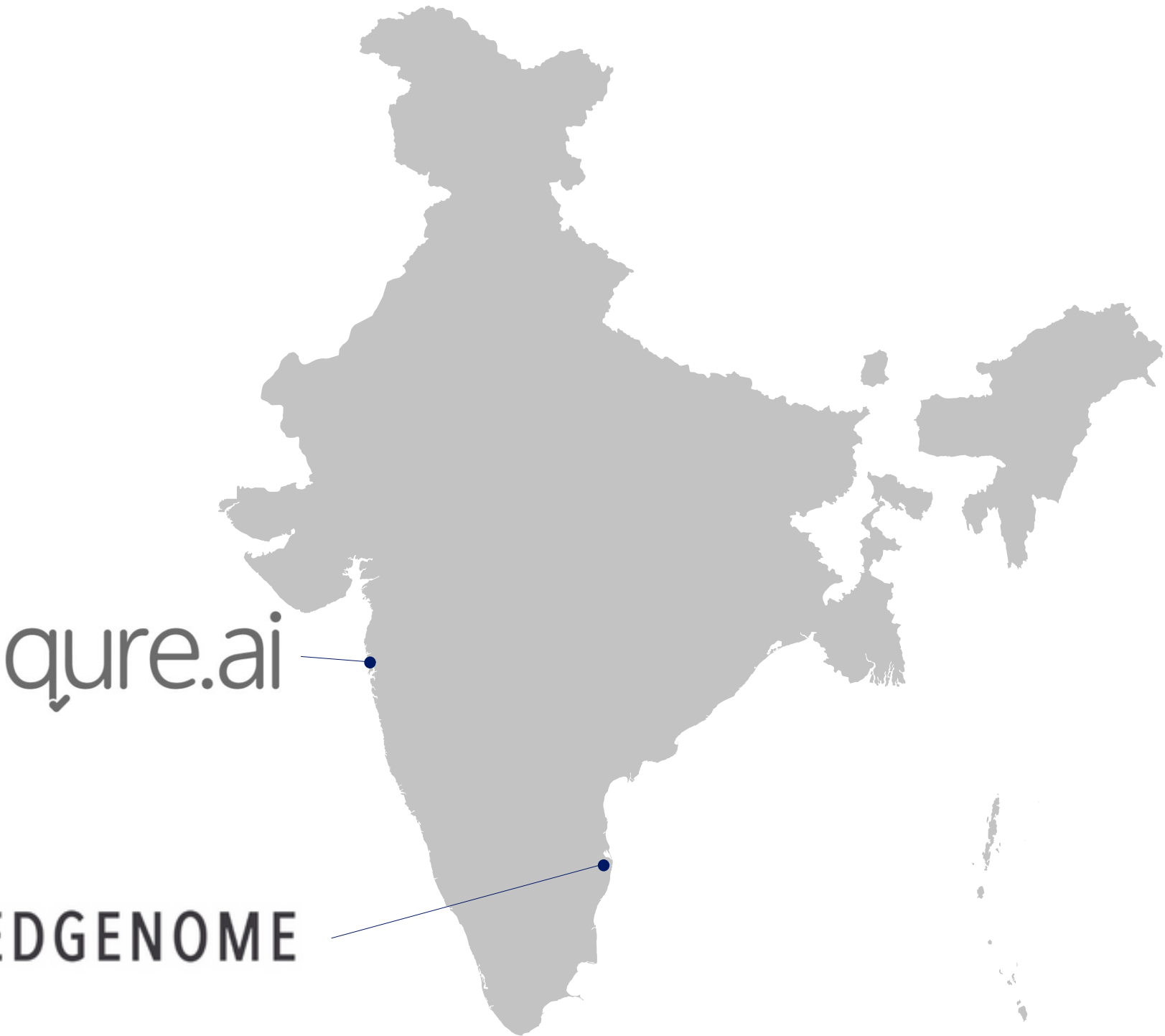
Companies in the current portfolio



Novo Holdings A/S Investments in India

MedGenome is the leading provider of genomic solutions for populations in South Asia, providing advanced genetic testing and bioinformatics solutions to patients, pharmaceutical companies, and research institutions around the world. Novo Holdings A/S led a \$50 million investment into MedGenome.

Qure.ai, one of the leading health tech firms using Artificial Intelligence for medical imaging diagnostics, secured \$40 million in a funding round led by Novo Holdings and HealthQuad, supported by existing investor Mass Mutual Ventures. Qure.ai will use the new investment to extend and strengthen its global reach, especially in the US and Europe, and intensify product development for critical care and community diagnostics.



Appendix and additional slides

Methods and sources

Methods:

- Collaborations were defined as either a project collaboration or a publication collaboration funded by NNF with at least one Indian collaborator/
Indian institute
- University ranking was based on the time period 2018-2022, across all sciences, with institutions with at least 100 publications, and based on the PP(top10%)
- Publications were defined as publications with at least one Indian and one Danish author
- Indian industry collaborators were defined as collaborations with companies registered in the India
- Indian research partners were defined as successful NNF grant applications with at least one Indian co-applicant
- The number of Indian attendees at the Copenhagen Bioscience Conference series were defined as applicants and attendees registered to a Indian research institute
- Novo Holdings A/S investments in India were defined as investments in companies with their headquarter located in India

Sources:

- Researchfish (NNF grant data)
 - Research publication collaborations
 - Company project collaborations
 - Publications
- Data Warehouse, NORMA and OMADA (NNF grant application data)
 - Co-applicants
 - Copenhagen Bioscience PhD programme applicants
- The Leiden Ranking 2022
 - University rankings
 - Publication impact data
- Novo Holdings A/S
 - Investment data