

Biotechnology is **transforming** the health sector through innovative applications that have made practices like genetic testing, drug treatments and artificial tissue growth a reality. Their pragmatic nature and rapid advancement have proven to increase efficiency, reduce errors, and achieve a good track record in reproducing **healthcare solutions**. Now, the biotechnology market is forecasted to grow 8.7% between 2023 and 2030, primarily down to the growth of biopharma.

Biotechnology is **life-changing** for human health. By harnessing nature's toolbox and using humans' genetic makeup, biotechnology can reduce infectious disease rates through new treatments, personalize medicine and create more precise disease detection tools. This year, microbial immunotherapy company Prokarium raised \$30 million in its bid to develop a new therapy for bladder cancer. Meanwhile, Twentyeight Health raised \$8.3 million to offer virtual care to medically underserved groups.

However, many regulatory hurdles exist, from funding to ethics, before operating in such a fast-paced industry.

An enabling environment

The [government](#) plays an active role in establishing a thriving ecosystem through conscious investment and policy. Some ambitious countries are increasing investments in science, which will help drive new biotechnology discoveries and help encourage capacity and skills development in the field. For instance, according to the Centre for the Fourth Industrial Revolution (C4IR) Serbia's research, some ambitious countries have upped investment in science from previous levels as follows:

South Korea - 4.3%.

Japan - 3.4%.

Finland - 3.2%.

Switzerland - 3.2%.

Austria - 3.1%.

Germany - 2.9%.

United States - 2.7%.

Slovenia - 2.4%.

France - 2.3%.

However, many common barriers still inhibit the growth of biotechnology. This includes the volume of funding required, the availability of sequencing equipment and the lack of **IT** resources for data storage and human capital, which absorb countries' resources and reduce biotech's positive impact.

How can countries overcome barriers to biotechnology?

In Europe, [Serbia](#) is a good example of a country that has taken a whole-of-government approach to biotechnology, collaborating with leaders from business, academia and civil society to create a robust environment where collaboration drives change.

Biotechnology players in Serbia have encountered challenges, including a need for sequencing platforms, storage capacity and systems for genomic data processing. To assist their local biotechnology ecosystem, the Government of the Republic of Serbia implemented the following strategies from which other countries can learn.

Building a strong regulatory framework

High levels of regulation do not undermine experimentation: they establish transparent, science-based and risk-focused guardrails that support responsible progress. **C4IR** Serbia has actively consulted policy experts and scientists to draft proposals for regulations that would facilitate biotechnology applications while protecting and respecting citizens' rights.

Fostering innovation and research

Accelerating the development of new products and technologies means being open to new ideas and environments. For example, the Government of Serbia **launched** the **National Artificial Intelligence Platform** and agreed to use it to store crucial research data. It then established the Centre for Genome Sequencing and Bioinformatics to implement '4P' medicine (predictive, preventive, personalized and participatory) and further develop biomedicine and biotechnology using state-of-the-art molecular biology and information technology tools.

Providing funding and incentives to enable industry growth

Biotechnology's growing research and development investments support a rich late-stage clinical pipeline that promises to remain a key driver for the **\$1.4 trillion** global biopharma industry. Serbia has been investing in the Bio4 Campus and funds to promote startups and expert challenges that have captured the attention of many global innovators.

Educate and train the workforce

The biotechnology industry employs over **1.9 million people globally** and is constantly evolving. Staff must be given the skills and knowledge to succeed in such a dynamic environment. Within a government delegation, C4IR Serbia conducted a study visit to the United Kingdom to meet numerous scientists and doctors to exchange knowledge and build partnerships.

Developing a strong IT infrastructure

Gathering, processing and analyzing vast amounts of data require multiple downstream processes. To create favourable conditions for research, pilots and scaling solutions, C4IR

Looking to establish a biotech ecosystem? Here's what you can learn from Serbia

[Serbia](#) is establishing a genetic and health data registry to ensure efficient and secure storage of genetic and health data and its usage in research and development. Overall, overcoming barriers to biotechnology requires a collaborative effort between [government](#), industry and academia. By working together, countries can create an environment that supports the growth and development of the **biotechnology industry**.

Source: [world economic forum](#)