9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

BUILD RESILIENT INFRASTRUCTURE, PROMOTE INCLUSIVE AND SUSTAINABLE INDUSTRIALIZATION AND FOSTER INNOVATION

The CNRS supporting the 2030 Agenda – a few examples:

To achieve sustainable development and community empowerment in many countries, investment in infrastructure – transport, irrigation, energy, information and communication technologies – is vital. Without this, there will be no growth in productivity and incomes and no improvement in living conditions (health, education, etc.). It is also crucial to consider the issue of carbon dioxide emissions during manufacturing processes and industrial activity more generally. While in many places they have decreased the past decade, the rate of their decline has not yet been observed across the world. Technological progress is at the root of efforts to achieve this goal and, more broadly, all the SDGs. Without technology and innovation there is no industrialisation, and without industrialisation there is no development, the key to economic and social progress. The very basis of innovation capable of improving what already exists and of breaking away from it to take our societies into the future is research. The CNRS and other stakeholders in the world of research are thus an essential component of and a driving force for social progress, by applying themes specific to this SDG as the very object of research and by innovating day after day in its laboratories, often resulting in the creation of start-ups.

RESEARCH TO UNDERSTAND OUR SOCIETIES' ECONOMIC DEVELOPMENT

Researchers at the Grenoble Applied Economics Lab (GAEL) lead work on the determinants of innovation, company strategies and their contractualisation, as well as on the effect of public policies on innovation. This concerns regulatory policies (intellectual property rights, marketing authorisation and labelling policies) and STI (science, technology and innovation) policies. Analysis of partnership dynamics and knowledge transfer between public research organisations and companies forms the core of the research.

Find out more: gael.univ-grenoble-alpes.fr/accueil-gael

The Group for Economic Theory and Analysis (GATE) has developed a programme known as FELIS, supported by the Agence Nationale de la Recherche and aimed at identifying the propensity of individuals and organisations to act honestly and morally rather than serving their own personal interest to the detriment of others.

Find out more: www.gate.cnrs.fr

The Research Group on Law, Economics and Management (GREDEG) focuses on several topics, including:

- Innovation ecosystems, creativity and entrepreneurship: how innovation ecosystems emerge and develop, examined from the viewpoint of knowledge transfer and creation, intellectual property rights and the management of collaborative innovation projects. There is special focus on the integration of the knowledge needed to implement collaborative innovation projects and entrepreneurial initiatives.

- Social and inclusive innovation: the themes of inequality and well-being are given full consideration when exploring ecological innovations. Research focuses on the notions of 'capability' and 'common'.

- Taking new environmental issues into account in innovation strategies (eco-innovation), along with their impact on the development of smart, inclusive and sustainable growth.

- Studies also look at the role of high-growth firms in maintaining intellectual, inclusive and sustainable growth.

Find out more: unice.fr/laboratoires/gredeg/accueil

AN INCREASE IN TRANSFER AND EXPLOITATION OF INNOVATION OVER THE YEARS

According to the statutory decree of 24 November 1982, the CNRS is not only tasked with conducting research work, but must also endeavour to protect its results and exploit them to contribute to the development of France's economy. The organisation has long been supported by its Innovation and Business Relations Department, its subsidiary, 'CNRS Innovation', its partnership services working in each of its 18 regional delegations and a whole panel of stakeholders involved in various programmes. In addition, it has recently set up a General Directorate for Innovation to reflect the growing emphasis put on this role.
With 150 structures shared with companies (17 joint research units working with an industrial concern and 131 joint laboratory agreements), the CNRS is resolutely focused on transferring and exploiting innovation.
For more than 25 years, CNRS Innovation, the knowledge transfer subsidiary of the CNRS, has been helping researchers transfer their research results to industrial applications.

CNRS INNOVATION

CNRS Innovation: key figures (2018)

More than 1,400 start-ups founded in the last 20 years (including 7 IPOs)
€2 million/year invested in the early-stage programme
Some twenty framework agreements with CAC40 companies
1,800 technologies
1,500 patent families under management
www.cnrsinnovation.com

Over the years, the CNRS has established itself as a major player in DeepTech in France. Most prominently, it takes part in Viva-Tech and created the Innovatives SHS event.

Some of the start-ups resulting from research in CNRSwork directly in connection with the themes of industry, innovation and infrastructure.

The Innovation Medal

First introduced in 2011, the Innovation Medal honours women and men whose outstanding research has led to a significant technological, therapeutic or social innovation that spotlights French scientific research.

START-UPS TO PROMOTE RESEARCH

Thanks to artificial intelligence tools developed at the Grenoble Informatics Laboratory (LIG), Skopai provides its subscribers with a complete analysis of the information available on the Internet (technology, markets, competitive positioning, etc.) about the start-ups that interest them.

Find out more: www.liglab.fr

Other new businesses have specialised in the fields of:
- Energy: **Tiamat** designs, develops and produces batteries that use sodium ions in an industry-standard format. These batteries could overcome some of the limitations of the lithium-ion batteries that currently prevail, such as recharging time, life span and production cost. Based in Amiens, this young company, which grew out of the French research network on electrochemical energy storage backed by the CNRS, now has several dozen functional prototypes including an electric scooter.

Find out more: www.tiamat-energy.com

- Art and heritage: **Mercurio** emerged from the Models and Simulations for Architecture and Heritage research unit and has created a scanner that can quickly and autonomously produce realistic 3D models of art objects of any size, from vases to sculptures. A new way of enhancing the value of museum collections.

- Health: based on research conducted at the Laboratoire d'hydrodynamique, **Sensome** has developed ultra-miniaturised sensors that use artificial intelligence to identify the biological nature of tissues in real time. Integrated in the intravascular Clotild™ probe, their technology can, for instance, categorise blood clots in order to help doctors during the treatment of an ischemic stroke.

Find out more: www.map.cnrs.fr

The start-up from the Grenoble Images, Speech, Signal and Control Laboratory (GIPSA) uses an innovative algorithm that identifies the discriminatory characteristics of a signal produced by a sensor to create a model that can predict the health status of equipment. Its software detects the risk of defects and also forecasts ageing and end of life.

Find out more: www.gipsa-lab.fr

CNRS
3, rue Michel-Ange 75016 Paris - France
+33 1 44 96 40 00
www.cnrs.fr

Contact : **agenda2030@cnrs.fr**