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ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD)**

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**Contribution by Belgium**

to the CSTD 2019-2020 priority theme on “Harnessing rapid technological change  
for inclusive and sustainable development”

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**Priority Theme 1: "Harnessing rapid technological change for inclusive and sustainable development"**

1. From the perspective of your country/region, **what is the role of the government in creating the ecosystem for innovation on frontier technologies for inclusive and sustainable development?** What are the most effective ways to support the **improvement of skill levels and better match the supply and demand of skills?** What is the role of the government in facilitating a fair relation between workers and employers in the digital economy? What are the current options and lessons learned from policies to protect people affected by rapid changes in labour markets (e.g. greater benefits for those whose jobs are destroyed, retraining, federal job guarantee)? What is the role of redistributive policies to ensure that no one is left behind in a world of rapid technological change?

**National level – domestic situation**

While Belgium is among the strongest digital countries in Europe according to the DESI-index, we rank “only” 12th among EU countries and slightly above the EU average as regards human capital. Digitisation represents an upskilling challenge for the Belgian economy. According to a study by the employer organisation Agoria, up to 584,000 open vacancies could remain unfilled by 2030 if no decisive action is taken, and 310,000 workers need to be retrained for new jobs.

There is a shortage of ICT graduates and ICT professionals in all regions of Belgium. Moreover, too few women are taking up STEM and ICT careers. In light of our institutional organization, Belgium has no overarching digital skills strategy, but the Communities and Regions have taken up this role partially. They are developing plans to strengthen STEM and digital competences, such as the recently-adopted Strategy for Digital Education plan for schools in the French-speaking Community and the STEM action plan (2012-2020) in Flanders. Computer programming not systematically included in school curricula at the moment.

There are however several other innovative initiatives tackling the stagnating output of the formal education system and the consequent acute shortage of ICT specialists by providing training for young people and start-ups: they include DigitalChampions.be, BeCentral, the Digital Belgium Skills Fund and WallCode.be. Belgium was quite active in the 2018 Code Week 2018, with 120 events held in the country in October 2018. The Belgian federal government and the Belgian Digital Champion created “Digital Duel”, an interactive assessment tool for citizens.

**National level: Enabel (Belgian Development Agency)**

While we realize the challenges at home, we are actively engaged internationally to promote digitalization as a driver for development. The [D4D \(digital for development\) program](#) sets out the strategic vision and priorities of the policy, its implementation, the partnerships to be established or strengthened and how the policy will be strategically managed. The policy is part of the overall approach of Belgian development policy and should be implemented through the collaboration of the various development actors at local, Belgian and international level.

In order to ensure that private sector actors are not hampered in deploying frontier technologies to new countries, it is important that governments create a favorable business climate by putting into place coherent regulations and policies. In addition, new technologies require new capacities in terms of governance. As such Enabel is for example implementing a project in Morocco to support capacity building of all partners of the bilateral cooperation program in the area of digital transformation of the public administration. D4D also brings with it the need for sound governance regarding the management and handling of data. One should also be aware of the possible tension between governance and innovation. Innovation can be highly disruptive and may involve a transgression of existing norms and interests. There needs to be some tolerance for new models to be explored and preparedness to update the regulatory environment when they prove to be beneficial.

On national level, during the VET Toolbox hackathon, one of the issues that was identified as key is to make sure that VET institutions are aligned with the demand for skills from the private sector, and that private sector can also participate in skills development. Furthermore, job seekers need to be aware of which skills are sought for by the private sector and how to obtain these. In response to this complex situation, the participants came up with applications that would be able to respond to this triangular need for information by bringing in all three stakeholder groups. Enabel will support the development of some of these apps and looks forward to further share the results of this.

### **Regional level: Wallonia**

At the regional level, the role of the *Walloon government* in creating and enabling environment for emerging technologies to contribute to sustainable and inclusive development has been to:

1. Set up a strategy (Digital Wallonia),
2. Set up an implementation agency (Agence du Numérique),
3. Support a variety of projects which bring together public and private sector as well as civil society.

The Walloon government set up the overarching digital strategy “Digital Wallonia” in 2015; its original span lasted until 2018, it has recently been renewed to cover the 2019-2024 period. This overall government-led strategy creates an ecosystem for innovation and supports a variety of projects whereby emerging technologies can support inclusive and sustainable development.

The "Digital Wallonia" strategy is structured around five major and structuring themes:

1. digital sector,
2. digital economy,
3. digital administration,
4. digital territory,
5. digital skills.

(more information on <https://www.digitalwallonia.be/fr/publications/bilan>)

The Walloon Government set up a Digital Agency (Agence du Numérique) to act as a catalyser and broker for the public and private sector as well as civil society to cooperate around several projects.

(more information on <https://www.digitalwallonia.be/fr/annuaire/adn>)

An evaluation of some of the most important projects carried out between 2015 and 2018 is available following these links:

- [Assessment of the #Wallcode](#): The Digital Wallonia #WallCode project brings together actors and initiatives aimed at developing the digital skills of the new generation of talents and Walloons in general, particularly in the fields of coding and computer programming, algorithmic logic and robotics.
- [Assessment of the Digital Wallonia program “Made Different”](#): "Made Different: enabling factories of the future" is a program to raise awareness, diagnose and support Walloon industrial companies to accelerate their digital transformation. Coordinated by AdN, Made Different acts as a catalyst by bringing together several competitiveness clusters, sectoral federations, research centers and clusters.
- [Cybersecurity assessment](#): the Digital Wallonia strategy aims to guarantee confidence in digital technology and ensure cybersecurity through the creation of a label, the integration of the subject into higher education curricula, awareness raising and the integration of a cybersecurity policy at government level.
- [Smart farming assessment](#): Digital Wallonia's Smart Farming project acts as a support or coordination platform for the development of projects and partnerships targeted at the digital transformation of the agricultural sector, in particular through awareness raising and support actions.

Finally, the “Agence du Numérique” also measures progress made in the some sectors, like the improvement of skills levels with its Barometer “Digital and Education”:

<https://www.digitalwallonia.be/fr/publications/education2018>

### **Regional level: Flanders**

In Flanders there are four strategical research centres: imec (nano and digital technology), VIB (biotech and life sciences), VITO (cleantech and sustainable development) and Flanders Make. These organizations play a key role in translating fundamental research into economic and social applications in Flanders and beyond through cooperation, licenses and spin-offs. They are encouraged to take up a more connecting role in their knowledge areas between research and the Flemish economic and social domains.

Flanders carries out a STEM policy in education and training aiming to include more (young) people in STEM education and training and STEM professions. FTI-Technopolis plays a central role as knowledge center in this area.

2. Can you provide examples of STI policies/**projects**/initiatives intended to promote and give directionality to technological change **to make it work for inclusive and sustainable development**? Are there policies/projects/initiatives that mitigate the potential negative effects of rapid technological change on inequality? Are there any of these policies/projects/initiatives directed to women, youth, **people with special needs or other groups facing specific challenges**? How have the policies targeted inequalities? What are the challenges confronted in implementing these policies/projects/initiatives?

### **National level – source: DESI Country Profile**

The Belgian public authorities have developed a federal strategy for digitisation (Digital Belgium) and regional strategies (Industrie 4.0, Digital Wallonia, beDigital.Brussels). Most projects involving crossborder cooperation are at regional level, often connected to EU programmes. In addition, several industry-led initiatives endorsed by public authorities have been launched to support companies in their digital transformation and to adopt new technologies and boost synergies and innovation. Examples include Made Different, cluster policies including the network of innovation clusters and innovative business networks, the living lab programme, and the Digital Health Valley.

Moreover, there are several initiatives aiming to make the regulatory framework fit for the digital age. While some follow the EU’s lead (Digital Act, the open data strategy, cybersecurity

measures), “mHealthBELGIUM” is designed to integrate mobile health services into the Belgian healthcare system. Various support mechanisms are available to companies: tax incentives, company vouchers and investment funds. Belgium is committed to advancing new digital technologies and to strategically investing in digital technologies, for instance through EU-coordinated programmes. In March 2019, the country launched AI 4 Belgium, a coalition to boost the use of artificial intelligence and AI readiness in Belgium.

### **Regional level Flanders:**

Global Conferences on Science, Technology, and Innovation (G-STIC), an example of an initiative on technological change for inclusive and sustainable development

VITO, the Flemish Institute for Technologic Research and a leading actor on cleantech and sustainable development, has a broad history of organising international conferences on cutting edge technological innovations and solutions with a consortium of Indian technology development and research institutes. These conferences have brought together heads of state and government, opinion leaders, policy makers and internationally renowned delegates of industry and academia, to debate the latest technological innovations, global sustainability, and technological solutions to climate change, environment, and energy related issues. Building on this long-standing tradition and expertise, this conferences series is designed to bridge the gap between cutting-edge technological development and international policy-making; and to provide effective, informal, support to UN system-wide technology facilitation mechanisms for the world-wide implementation of the SDGs and the transition to less carbon- and resource-intensive, more resilient, economic and inclusive sustainable development models.

<https://2019.gstic.org/>

The Global Sustainable Technology & Innovation Conference series (G-STIC), hosted jointly by VITO and partners, will support technology discussions, negotiation processes, and expert meetings convened under the UN umbrella, with the best available science and technological reviews, including as they relate to discussions on technology for inclusive and sustainable development, the implementation of the 2030 Agenda for Sustainable Development and its associated SDGs, the climate change convention, and as a Means of Implementation of inclusive and sustainable technologies.

### **National level: Federal Scientific Policy and Sustainable Development**

The Federal Agency for Scientific Policy Belspo has [several programs combining research on technology and sustainable development](#):

- SSD: Science for sustainable Development – this programme focuses on the following sectors: Energy, Transport and mobility, Agro-nutrition, Health and environment, Climate, Biodiversity, Atmosphere and ecosystems, Transversal Research
- Antarctica: Belgian “Pole Platform”
- North Sea: Research in the North Sea and research ship Belgica

### **National level: Enabel (Belgian Development Agency)**

Two of the strategic priorities of Belgium’s D4D policy relate to inclusion: (1) digital for inclusive societies, such as democratic inclusion, financial inclusion and equal access to quality basic services; (2) digital for inclusive and sustainable economic growth. In this regard it is important that the potential of digital for more inclusion, both in terms of increasing access, as in lowering barriers to access is harnessed, for example by making sure that human-centered design is part of the development process and supporting projects that leverage digital for basic human rights such as identity, and that risks are managed, for example by training vulnerable groups on digital rights and skills.

### **Regional level: Wallonia**

At regional level, the Walloon government is setting up these examples:

- Example of project to make technological change work for unemployed people :

The ICT Mobilisation Plan (PMTIC), born in 2002 on the initiative of the Walloon Minister of Employment and Training, is intended to raise awareness and train the public of job seekers in ICT.

(more information on <https://www.pmtic.net/>)

- Example of project to make technological change more inclusive throughout the region :

The network of EPN’s labelled "Espaces publics numériques de Wallonie" is an initiative of the Walloon Government to fight against digital exclusion and promote the participation of all citizens in the information society. There are more than 150 EPNs in Wallonia, they offer a wide range of access, training and support services, adapted to the needs of these groups.

(more information on <http://www.epndewallonie.be/>)

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| <p>3. Can you provide examples of innovative initiatives in partnership with (or by) the private sector in/from your country that harnesses frontier technologies for inclusive and sustainable development? What are the innovations in terms of the use of technology? What are the innovations in terms of business models?</p> |
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### **National level: Enabel (Belgian Development Agency)**

The D4D Coalition, which is led by Enabel and GIZ together with 5 partners from private sector, has organized three multi-stakeholder workshop on D4D last year and early 2019. These workshops have led to a joint understanding that moving forward with an inclusive digital economy agenda requires dialogue between all stakeholders (civil society, government, development partners and private sector) to identify common interests and understand the added value of bringing together our skills and capacities.

### **International level: Energy Storage Partnership (World Bank)**

This new initiative launched earlier this year has the ambition to foster international cooperation to adapt and develop energy storage solutions for developing countries. This is an important initiative worth exploring further for the CSTD. Belgium is represented by the Belgian Research Alliance (BERA), which comprises 18 different research partners. Together with its South-African counterpart BERA will focus on an “Energy storage testbed for knowledge dissemination and capacity building”.

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| <p>4. What are the actions that the international community, including the CSTD, can take to contribute to maximize the benefits associated to rapid technological change and mitigate the risk of these technologies widening or creating new inequalities within and across countries? Can you give any success stories in this regard from your country or region?</p> |
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The international community, including the CSTD, could promote the involvement of the local level (regional, local governments or cities) in defining guidelines for strategies to deal with rapid technological change. The relevance of projects tackling technological change only increases as one gets closer to citizens, to people. Indeed, solutions tailored to specific local needs can best channel the potential of rapid technological change and mitigate its risks.

### **National level: Enabel (Belgian Development Agency)**

On national level, the efforts of “early adopters” and development partners in the area of D4D should be recognized and used as lessons learned to scale up the use of digital technologies for development. Too many projects remain small scale and local projects, whereas the cost-effective benefits of D4D usually require scale. It is therefore necessary to build broader coalition and make sure that D4D efforts align with existing or to be established national strategies and action plans.



5. Could you suggest some contact persons of the nodal agency responsible for policies related to rapid technological change and its impact inequality as well as any experts (from academia, private sector, civil society or government) dealing with projects in this area? We might contact them directly for further inputs or invite some of them as speakers for the CSTD inter-sessional panel and annual session.

- ✓ Benoît Hucq, Directeur Général, Agence du Numérique, Wallonie: [Benoit.Hucq@adn.be](mailto:Benoit.Hucq@adn.be)
- ✓ For Enabel, [Kirsten.vancamp@enabel.be](mailto:Kirsten.vancamp@enabel.be) can be contacted with regards to D4D program.

6. Do you have any documentation, references, or reports on the specific examples on the priority theme in your country or region?

- <https://www.digitalwallonia.be/>
- <https://www.hackthegoals.be/english/e-report/>
- [https://diplomatie.belgium.be/sites/default/files/downloads/strategic\\_note\\_d4d.pdf](https://diplomatie.belgium.be/sites/default/files/downloads/strategic_note_d4d.pdf)
- <https://www.wehubit.be/en/projects>
- <https://www.enabel.be/story/water-development-rural-areas>