

GLOBAL INFORMATION SOCIETY WATCH 2019

Artificial intelligence: Human rights, social justice and development



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Artificial intelligence: Human rights, social justice and development

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BENIN

GIVING GIRLS A HEAD START IN ARTIFICIAL INTELLIGENCE IN BENIN



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Introduction

Benin's digital sector is a dynamic one, with an environment that includes a wide diversity of start-ups. Although artificial intelligence (AI) seems new and unclear to some people (many link it only to the police as their use of drones and robots to track criminals), several start-ups invest their resources in the subsector. Some of them, for example femCoders, promote the better engagement of women in this still male-dominated domain.

To help bridge both the digital and gender gap in the country, and to mobilise women around the digital economy, femCoders – an award-winning female-led initiative with a focus on holding free after-school programmes to expose girls to digital technologies – runs a robotics training programme with the support of the United States Embassy in Benin. Through this programme, hundreds of young people, mostly girls, are trained on robot assembling and programming.

Digital equality is at the centre of almost all discussions in Benin. This includes the country's digital policy, with its six key government projects in the information and communications technology (ICT) sector (see below), and the annual Digital Weeks,¹ which aim to highlight and develop the digital ecosystem in Benin through a series of activities including a forum (Afro Tech International Forum), an exhibition (Benin Start-Up Week), training (Benin Digital Tours) and contests on digital solutions and digital art.

Encouraging women's engagement in AI is also an imperative in the country. A Girls in ICT Day,² plus a National Network of Women in ICTs that gathers all women, from the minister of digital economy to farmers to students, highlight the importance of gender

in the digital economy.³ However, the sector remains male-dominated, which makes the femCoders initiative all the more impressive. To address inequality in the ICT sector, the country needs more gender-sensitive policies and strategies that will not only support women-led start-ups in the AI field and protect the rights to equality and non-discrimination, but also initiatives that give girls a head start.

The policy context in the digital sector

Benin's sector strategy in the field of ICTs aims to transform Benin into West Africa's digital services hub for accelerated growth and social inclusion by 2021. According to the Sectoral Policy Declaration,⁴ the development of the digital economy is an undeniable means for social inclusion and well-being and will help reduce unemployment, catalyse economic development in other sectors, and create transparency and accountability in the public administration. Under the strategic guidelines of the Declaration, by 2021, the coverage rate of broadband internet services should reach 80%, the fixed telephone line penetration rate 40%, and mobile penetration 60%. The size of the market, meanwhile, is expected to reach nearly USD 1 billion and to create 90,000 jobs. As a result, Benin is expected to enter the top 100 of the Networked Readiness Index (NRI) and achieve a UN E-Government Development Index of 0.5.

As part of its Programme of Action (*Programme d'action du gouvernement*),⁵ the government is implementing 45 flagship projects, including six in the digital sector. These six projects include the deployment of high and very high speed internet throughout the country, the transition to Digital Terrestrial Television (DTT), the implementation of smart public service (Smart Gov), the roll-out of e-commerce, e-education and e-training, and the promotion and development of digital multimedia content.⁶

In addition to the six core digital projects implemented by the government, the country through its

1 <https://semainedenumerique.bj/fr>

2 Assogbadjo, M. (2018, 7 May). Journée internationale des jeunes filles dans les Tic: Encourager la cible à évoluer dans le secteur. *La Nation*. <https://www.lanationbenin.info/index.php/actus/159-actualites/16075-journee-internationale-des-jeunes-filles-dans-les-tic-encourager-la-cible-a-evoluer-dans-le-secteur>

3 Registration form to join the network: <https://tinyurl.com/forumRenafetic>

4 <https://numerique.gouv.bj/images/DPS.pdf>

5 <https://www.presidence.bj/benin-revele/download>

6 www.revealingbenin.com/en/programme-dactions/programme-digital-economy

parliament passed the Digital Code,⁷ a collection of laws comprising 647 articles that frame activities related to electronic communication. The Code defines both rights and duties of citizens and service providers, but also the institutional and legal frameworks for activities in the digital sector.

The AI environment in Benin

The digital policy does not formally include AI as a subsector, and the concept is still new to the public. Nevertheless, the ICT environment in Benin is very dynamic, with a wide variety of actors. In addition to mobile operators and other internet service providers, a large number of start-ups in the commercial space offer a variety of digital solutions. Digital Week⁸ and Girls in ICT Day,⁹ two annual opportunities to share knowledge and promote activities in the sector, help to give greater visibility to start-ups and innovative initiatives. According to Minister of Digital Economy Aurélie Adam Soule Zoumarou, it is the government's duty to encourage students to enter the engineering, computer science and mathematics streams, and to increase the involvement of girls and women in ICTs.¹⁰

Among the numerous digital actors in the commercial field, some invest in AI even if the subsector is still almost unknown to the general public:

- RINTIO is a digital service start-up specialised in the development of digital solutions, including using big data and AI in its data lab.¹¹
- Machine Intelligence For You (MIFY)¹² organises an annual contest on AI combining algorithms with local games (e.g. dominos or *adjii* in the local language).¹³
- RightCom is a start-up in the field of AI. Its main product, RightCapture, is software connected to cameras that helps collect data through a real-time video stream analysis. RightCapture can detect movements as well as gender, age and emotions of a human being.¹⁴
- SmartCo promotes women's initiatives in the digital sector including in AI. For its first annual training, 100 young women aged 18 to 35 were selected and trained on the development of web and mobile applications.¹⁵

7 <https://sgg.gouv.bj/doc/loi-2017-20>

8 <https://semainedunumerique.bj/fr>

9 Assogbadjo, M. (2018, 7 May). Op. cit.

10 Ibid.

11 <https://twitter.com/rintiogroup?lang=en>

12 <https://mify-ai.com>

13 <https://maic.mify-ai.com>

14 <https://right-com.com/fr/la-ministre-beninoise-de-leconomie-numerique-visite-rightcom-a-cotonou>

15 <https://labinnovation-sg.com/smartzco>

- KEA Medicals is an internet database on people's medical information created by Arielle Ahouansou, a former participant in the Tony Elumelu Entrepreneurship Programme for people under 30 years of age. The platform, an electronic medical log, includes details of an individual's medical history and family contacts. The aim of KEA Medicals is to create an e-identity in the form of a QR code printed on a bracelet or a patch to stick on a smartphone. A scan of the QR code provides access to the patient's medical record.¹⁶
- Benin Flying Labs is a hub that provides hardware and software training for various drone platforms in Benin. They have projects in a wide range of sectors such as in health, agriculture, conservation and development.¹⁷

femCoders and its robotics programme

femCoders is a community of women who train their peers in robotics and programming such as logic and languages, Blockly¹⁸ and Scratch games,¹⁹ drawing and 3D printing, and creating websites using HTML. They strengthen the technical capacity of women in an environment where they can share their knowledge with their peers.²⁰ Following her mentorship as part of Benin's young robot builders' team at the FIRST Global Challenge in Washington in 2017²¹ – where the team was ranked seventh out of 163²² – Rachael Orumor founded her start-up "femCoders" and received a grant from the US Embassy in Benin to implement its robotics training programme focused on girls. For its first training programme, about 400 students, most of them, but not all, girls, were drawn from six Cotonou schools.

They were trained on programming three robots, namely Vex Edr Robot, Vex IQ Robot and Benin Bot Official. These robots were trained for various tasks, notably to sing Benin's national anthem (*l'Aube nationale*), or a lullaby to a baby who wakes up in the absence of its mother, to simulate the transport of a patient to a health centre, or to create a labyrinth full of obstacles.²³ The training lasted six weeks for each

16 <https://www.keamedical.net>

17 <https://flyinglabs.org/benin>

18 <https://developers.google.com/blockly>

19 <https://scratch.mit.edu/explore/projects/games>

20 www.femcoders.info/index.php

21 <https://first.global/fr/2017-nations/team-benin>

22 Africa Times. (2017, 19 July). No. 7 Team Benin leads the pack of Africa's FIRST Global robotics winners. *Africa Times*. <https://africatimes.com/2017/07/19/no-7-team-benin-leads-the-pack-of-africas-firstglobal-robotics-winners>

23 Meton, A. (2018, 24 August). Projet "Girls focused robotics training programme": Des élèves initiés à la technologique robotique. *La Nation*. <https://www.lanationbenin.info/index.php/societe-2/146-societe/17522-projet-girls-focused-robotics-training-programme-des-eleves-inities-a-la-technologique-robotique>

school. Seven learning projects in robotics science were created at the schools, and each school benefited from a donation of a robotics kit in addition to the training manuals offered to each student.

Above all, the initiative aims to give girls the opportunity to consider and even embrace a career in robotics at a young age. “We understand that computer science and robotics are replacing people in various tasks today to the point where there is the problem of unemployment, much of which is due to the fact that the tasks are performed by computers instead,” said Orumor. “And if this continues, in a few years, we will not be able to continue working in Africa because we do not have the necessary skills in this area,” she stressed.²⁴ “This training allowed me to learn a lot. It was a great experience where we learned the rigour required from the work and team building,” said Daniella Bossa, one of the learners, during a demonstration session.²⁵

Giving girls a head start in robotics

femCoders and other initiatives – whether by the government or non-state actors – that give girls a head start in AI will improve the participation of women in the digital sector, but will not be enough to bridge the digital divide and the gender gap in the country. There is a need for a digital equality policy that includes women with a clear programme to support gender empowerment.

One aspect of such a revised digital policy would be adopting the UN Development Programme (UNDP) Gender Equality Seal,²⁶ a ten-step process developed to support companies to close their gender gap by assessing policies and implementation strategies. It guides public and private enterprises in meeting gender standards and promotes empowerment and equality in the business sector. The programme is an excellent opportunity given that most of the actors in the AI field in Benin are start-ups. In February 2019, the Ministry of Social Affairs and Microfinance, with the technical and financial

support of the UNDP, organised a training session in Cotonou on certification using the Gender Equality Seal and the process involved. The training gathered officials from the departments of planning and programming as well as gender focal points of ministries and civil society organisations.

“If we are able to close the gaps between men and women in the labour market, in education, in health care, we could substantially reduce this loss of economic gain for our country,” said Adama Bocar Soko of UNDP Benin during the training.²⁷

Using the UNDP’s Gender Equality Seal, especially in the digital and AI sector in Benin, will help increase women’s leadership in decision making in the sector and increase their participation. To help this happen, the government can add a Gender Equality Seal certificate for all start-ups in Benin as a requirement for accessing the newly created Digital Fund, which was set up by the government to support digital entrepreneurship. This will encourage start-ups to develop and adopt gender equality policies and action plans to address inequalities. This will also increase the number of women-owned start-ups.

Supporting start-ups by women and introducing a quota at universities for girls in technological studies should contribute significantly to closing the digital gap so that what is currently perceived as a threat is turned into an opportunity. Women make up 52% of the population of Benin. It would therefore be fair to grant them at least parity in scholarships to universities, especially in sectors dominated by men. Creating an AI stream at the National University of Engineering and Mathematical Technologies of Abomey, for example, could pave the way for empowered engagement by women in this subsector of the digital economy.

Another idea would be to introduce the principle of gender rotation in the exhibition stands for start-ups during the Digital Weeks, which are organised by the government in all provinces each year. By prioritising start-ups by women every two years, the Digital Weeks would give the start-ups greater visibility and attract investors. Parity for start-ups in exhibition stands during the Digital Week is another possibility. But a Digital Week dedicated to women in the digital sector is likely to give much more visibility to start-ups by women, which is not necessarily guaranteed with the parity option.

24 Amoussou, G. (2018, 6 December). La robotique, l’expérience béninoise avec Rachael. *24 Heures au Bénin*. <https://www.24haubenin.info/?la-robotique-l-experience-beninoise-avec-Michael>.

25 Ibid.

26 “The GES is a tool for public and private enterprises to come together and contribute towards the achievement of the Sustainable Development Goals (in particular, SDGs 5, 8, 10 and 17) by reducing gender gaps and promoting gender equality and competitiveness simultaneously, for a fair, inclusive and sustainable growth. [...] The programme has created a dynamic partnership between the private sector, public sector, trade unions and UNDP with a tool to develop public policy, foster constructive dialogue, invite companies to go from commitment to action and provide hard-evidence of gender mainstreaming efforts to tackle the most pressing gender inequalities.” <https://www.genderequalityseal.org/programme>

27 www.bj.undp.org/content/benin/fr/home/presscenter/pressreleases/promotion-de-l_egalite-de-genre-dans-le-secteur-public-au-benin.html

Conclusion

This is a call for innovative approaches to address the issue of gender equality in the digital sector, in particular in the AI subsector. Developing a gender-sensitive policy for AI can help increase the engagement of women in the subsector, but also encourage gender-sensitive strategies and a human rights-based approach in business life.

In its report released in July 2019 entitled *The West Africa Inequality Crisis: How West African governments are failing to reduce inequality, and what should be done about it*, Oxfam ranked Benin 12th out of 16 countries with a score of 0.19.²⁸ This ranking shows the low commitment of leaders to reduce inequalities. In Benin, as in many other low- and middle-income countries, women are subject to double discrimination, due to both their gender and their socioeconomic context. The fact that AI is a new field in the digital economy offers an opportunity – albeit a small one – to correct some of these imbalances.

Action steps

The following steps are suggested for Benin:

- Revise and adapt the sectoral policy declaration to make it more gender-sensitive.
- Develop and implement a gender-sensitive policy in the AI subsector.
- Include criteria relating to the UNDP's Gender Equality Seal certification for start-ups accessing the Digital Fund, especially those in the AI subsector.
- Introduce the principle of gender rotation in the exhibition stands for start-ups during the Digital Weeks.
- Grant young women at least parity in scholarships to universities, especially in the sectors dominated by men.

²⁸ Hallum, C., & Obeng, K. W. (2019). *The West Africa Inequality Crisis: How West African governments are failing to reduce inequality, and what should be done about it*. Oxfam International. <https://oxfamilibrary.openrepository.com/bitstream/handle/10546/620837/bp-west-africa-inequality-crisis-090719-en.pdf>

Artificial intelligence: Human rights, social justice and development

Artificial intelligence (AI) is now receiving unprecedented global attention as it finds widespread practical application in multiple spheres of activity. But what are the human rights, social justice and development implications of AI when used in areas such as health, education and social services, or in building “smart cities”? How does algorithmic decision making impact on marginalised people and the poor?

This edition of Global Information Society Watch (GISWatch) provides a perspective from the global South on the application of AI to our everyday lives. It includes 40 country reports from countries as diverse as Benin, Argentina, India, Russia and Ukraine, as well as three regional reports. These are framed by eight thematic reports dealing with topics such as data governance, food sovereignty, AI in the workplace, and so-called “killer robots”.

While pointing to the positive use of AI to enable rights in ways that were not easily possible before, this edition of GISWatch highlights the real threats that we need to pay attention to if we are going to build an AI-embedded future that enables human dignity.

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