GLOBAL INFORMATION SOCIETY WATCH 2020

Technology, the environment and a sustainable world: Responses from the global South

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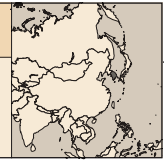
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Introduction

Due to the COVID-19 outbreak and extreme weather including heat waves and floods that occur around the world, many countries are becoming more aware of the climate crisis. The climate crisis is causing not only environmental disasters, but also a serious economic downturn and social inequality; so the response also calls for an overall reform of the social and economic system. In line with this, major countries around the world, including the United States and European nations, are setting up "Green New Deal" strategies to cope with the climate crisis, break down inequality and transform themselves into a decarbonised economic society.

Korea is globally recognised as an internet powerhouse, but is also criticised as a so-called "climate villain" because its response to the climate crisis is insufficient. Information and communications technologies (ICTs), including the internet, are both factors that exacerbate the climate crisis in terms of consuming vast amounts of energy, and also recognised as a useful means of coping with it. This report aims to identify and evaluate issues related to Korea's ICT policy in the context of responding to the climate crisis, focusing on the Korean New Deal Comprehensive Plan.

Background

The Korean government has been promoting environmental informatisation policies – which entail making databases from environmental observation data such as one on air quality during specific periods which helps to anticipate climate – to promote ICT-based environment-related public works and provide a public service. The Ministry of Environment has established and implemented a "basic plan for environmental informatisation" every five years since 1997. It started with the first basic plan (1997 to 2001), which focused on the establishment of basic infrastructure and the informatisation of environmental affairs. The fourth basic plan, which will be implemented from 2017 to 2021, is planning to implement an intelligent environmental information system by applying technologies of the so-called Fourth Industrial Revolution such as big data, the internet of things (IoT) and artificial intelligence (AI).[1]

From the start of the Moon Jae-in administration, the government has been promoting and nurturing Fourth Industrial Revolution technology and industry as a key policy. The fourth basic plan reflects this. However, the government is closer to carrying out its national information service plan in general at the Ministry of Environment level rather than use ICTs as part of its response to the climate crisis.

Korea's response to the climate crisis has not received a favourable evaluation internationally. Since the signing of the Paris Agreement in 2015, the Korean government has also submitted a Nationally Determined Contribution (NDC), a national greenhouse gas reduction goal, which was 37% of business as usual[2] by 2030. In December 2016, the Office for Government Policy Coordination established the First Basic Plan for Climate Change Response and the 2030 Roadmap for Greenhouse Gas Reduction. South Korea's NDC, however, was rated insufficient by the Climate Action Tracker, and South Korea ranked among the world's top four climate villains along with Saudi Arabia, Australia and New Zealand.[3]

The Moon Jae-in government adopted progressive policies such as shrinking coal power plants and denuclearising power plants, but the climate crisis response was still insufficient. The G20 Brown to Green Report 2018,[4] which provides concise and comparable information on carbon emission mitigation measures, financial conditions and vulnerabilities in G20 countries, showed that most of the G20 countries generally have poor levels of

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1   Ministry of Environment. (2019). *Environmental White Paper 2019*.

2   A scenario for future patterns of activity which assumes that there will be no significant change in people's attitudes and priorities, or no major changes in technology, economics or policies, so that normal circumstances can be expected to continue unchanged.

3   Mathiesen, K. (2016, 4 November). South Korea leads list of 2016 climate villains. *Climate Home News*. https://www.climatechangenews.com/2016/11/04/south_korea_climate_villains

4   Climate Transparency. (2018). *Brown to Green: The G20 Transition to a Low-Carbon Economy*. Climate Transparency, c/o Humboldt-Viadrina Governance Platform. https://www.climate-transparency.org/g20-climate-performance/g20report2018

response, but Korea's efforts are below average. In the 2020 Climate Change Performance Index, which monitors each country's climate protection performance, Korea ranked 33rd, the lowest among 34 OECD countries after the United States. Overall, the Korea index showed "very low" performance in 2020, similar to the previous years. It means that no progress has been made on the greenhouse gas emission and energy usage sectors that have been evaluated very low.[5]

Korean civic and environmental groups launched the "Climate Crisis Emergency Action"[6] on 21 September 2019, joined the global climate strike and began to inform Korean society of the importance of climate crisis issues. The emergency action group, which currently involves 377 organisations and individuals, has been active, continuously monitoring environmental policies and holding forums to seek policy alternatives.

The Korean New Deal

Due to COVID-19, the Korean government faced an economic downturn and mass unemployment in 2020. In order to remedy this, it has developed the Korean New Deal, in part also in response to international pressure and the demand of civil society to cope with the climate crisis.

The New Deal is defined as a decarbonised economic and social transition aimed at coping with the climate crisis, breaking inequality and creating green jobs.[7] It is not necessarily new in Korea: even before this crisis, in order to respond to a slowing of the economy, the Moon Jae-in government sought to transition to the so-called "innovation economy" centred on the promotion of new technologies, including big data and AI.

The "Korean New Deal Comprehensive Plan" announced on 14 July 2020 has a vision to transform Korea into a "leading economy from a chasing economy, a low-carbon economy from a high-carbon dependency economy, and an inclusive society from an unequal society." The comprehensive plan includes a "strengthening safety net" policy to support both a Digital New Deal and a Korean Green New Deal.

The United Nations Environment Programme (UNEP)[8] proposed the Global Green New Deal in 2009, and it has recently been proposed in the US and Europe. In the US, more than 70 lawmakers, including Democratic Congressperson Alexandria Ocasio-Cortez and Senator Ed Markey, submitted a Green New Deal resolution in February 2019, and Joe Biden, who was nominated as the Democratic presidential candidate, also presented the Green New Deal as a pledge. In Europe, the European Commission announced the "European Green Deal", which aims to achieve zero carbon emissions by 2050. The Green New Deal was proposed as a pledge from the Justice Party, the Green Party and the ruling Democratic Party during the April 2020 general election.

The Digital New Deal aims to promote digital innovation across the economy by utilising the country's ICT base – Korea's strength – and includes a total of 12 tasks, among them strengthening of its DNA (Data, Network, AI) ecosystem. The Green New Deal aims to build a "net-zero" economy and transform the economic base into a low-carbon and eco-friendly one. It includes a total of eight tasks in three areas (see below) and aims to strengthen the social safety net with respect to employment and career transition. The government plans to invest KRW 114.1 trillion (about USD 102 billion) of state funds by 2025 to create 1.9 million jobs.

ICTs and the Korean New Deal

While tasks of the Digital New Deal directly advocate supporting the data, 5G and AI industries, the Green New Deal policy also relies on new technologies such as big data and AI. The Green New Deal policies consist of eight tasks in three areas: 1) green transportation and infrastructure, 2) low-carbon and decentralised energy supply, and 3) innovation in the green industry.

For example, the so-called digital twin project aims to establish a "digital twin" for roads, underground spaces, ports and dams to manage the land and facilities safely, and it uses new technologies such as AI and drones.[9] The smart green industrial complex project also includes the establishment of a system for remote monitoring of leakage of harmful chemicals using AI and drones, and the establishment of smart energy platforms that can collect data and visualise energy flows using ICTs. It is also planning to make it mandatory to attach IoT measuring devices to monitor the emission of pollutants at the workplace.

In the case of the task of digitising the public safety social overhead capital, it will install next-generation intelligent transportation systems

5   https://www.climate-change-performance-index.org/country/korea

6   https://climate-strike.kr/

7   Lee, Y. (2020). *Green New Deal Evaluation and Improvement Plan*.

8   United Nations Environment Programme. (2009). *Global Green New Deal: Policy brief*. https://www.unenvironment.org/resources/report/global-green-new-deal-policy-brief-march-2009

9   A technology that predict results in advance by creating twins of real-life objects in a computer and simulating situations that can occur in reality.

(C-ITS)[10] for major highways, IoT sensors for all railways, and it will utilise non-face-to-face biometric systems, intelligent CCTV and IoT at airports and ports.

Criticism of the Korean New Deal

However, civil society organisations in Korea are fiercely criticising the Korean New Deal. Environmental groups criticise the comprehensive plan by saying the "perception of the seriousness of the climate crisis has disappeared, and we saw only the list of individual business promotion plans."[11] The biggest problem with the Korean Green New Deal is that no clear goals have been set. The Climate Crisis Emergency Action argues that the goal of reducing greenhouse gas emissions by nearly half of the 2010 levels by 2030 and net-zero by 2050 as suggested by the UN Intergovernmental Panel on Climate Change (IPCC) should be clearly set. However, the Korean New Deal only contains the vague phrase "pursuing a carbon neutral society" without providing a deadline for the net-zero society.[12] It also criticises the government's plan as lacking a strategy to transform the social and economic system needed in times of climate crisis. It says there is no mention of the reduction of polluting industries such as coal power plants or internal combustion engine vehicles, and that only measures to foster eco-friendly industries are listed. While the true Green New Deal should have a "just transition", it is hard to find a "just transition" for workers and local residents in the Korean New Deal.

Jinbonet and other digital rights organisations have criticised the Digital New Deal plan as "an attempt to boost economic growth by selling people's personal information."[13] Actually, the so-called DNA project included in the Digital New Deal was already announced in an early stage of the Moon Jae-in government. The revision of the Personal Information Protection Act, which is the basis of the project, was made in January 2020. The main purpose of the revision is to allow companies to use pseudonymised personal information for other purposes than the original purpose, or to provide it to third parties without consent of the data subjects. The government has argued that the utilisation of personal information is needed to develop the big data and AI industries, but civil society has criticised the revision as a "personal information theft law".

Under the goal of developing Fourth Industrial Revolution technologies, the comprehensive plan is unconditionally focusing on the use of new technologies without any consideration on what the most important problem in a particular field might be, and whether technology can help solve the problem. For example, regarding the project establishing a system for the remote monitoring of the leakage of harmful chemicals based on AI and drones, the Korean Federation for Environmental Movement (KFEM) raised questions about whether it is a project that properly diagnosed and reflected problems at the site, by saying "unless it is a very special case to see the fluidity of hazardous chemicals, measuring them with AI and drones can be more dangerous."[14]

Conclusion

The Korean Ministry of Environment has been pushing for environmental informatisation for a long time, and recently started introducing new technologies such as AI. These new technologies might be helpful to enact environmental policies including coping with the climate crisis. They can provide information to the public more easily, identify trends that people have not perceived or enable the collection of detailed environmental data. However, the Korean government's ICT policy is not effectively linked to its climate crisis response policy.

First, although Korea has a good ICT infrastructure and data system, the country has not been able to implement comprehensive and effective greenhouse gas reduction and adaptation policies. One of the reasons is that the projects initiated by various ministries such as the Ministry of Economy and Finance (budget), Ministry of Trade, Industry and Energy (energy), Ministry of Environment (greenhouse gas reduction), and Ministry of Science and ICT (technology and data), are not effectively linked with shared data and ICT infrastructure.

Second, despite the introduction of new technologies, ICTs often fail to be linked to an actual climate crisis response programme in reality. Technically, for example, combining weather information with energy production data can predict future demand and supply, which can significantly

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10 Cooperative Intelligent Transport System. Next-generation intelligent transportation seeking safety and convenience through mutual communication between cars or between cars and transportation infrastructure.

11 Greenpeace. (2020, 14 July). A great disappointment at the half-baked Green New Deal. https://www.greenpeace.org/korea/press/14426/pressIease-green-new-deal-statement

12 Press release from the Climate Emergency Action about Green New Deal plan from the government: "Without a goal, it cannot respond to the climate crisis". https://climate-strike.kr/2601

13 Statement: "Digital New Deal should be with information rights". https://act.jinbo.net/wp/43213

14 KFEM statement: "To succeed in the Green New Deal, you need to complement your goals and challenges". http://kfem.or.kr/?p=208426

lower the power reserve ratio to reduce the use of fossil fuels, but the Korean government is still unable to implement this, and the power rates controversy repeats every summer.

Third, ICTs might help to respond to the climate crisis, but they might accelerate the climate crisis at the same time. Jeremy Rifkin, the author of *The Green New Deal: Why the Fossil Fuel Civilization Will Collapse by 2028, and the Bold Economic Plan to Save Life on Earth*, stresses that the use of ICT devices, as well as the manufacturing of them and the infrastructure to maintain them, consume enormous amounts of energy. He has insisted that the Green New Deal agenda must pay close attention to decarbonisation of the ICT sector. In Korea, however, only the use of ICTs is emphasised, and there is no concern about how to minimise environmental problems caused by ICTs. Currently, a growing number of companies have joined the global campaign "RE100" to replace electricity with 100% eco-friendly renewable energy, but Korea has yet to set standards for this, and the government is reluctant to demand that the industry reduce greenhouse gas emissions in fear of weakening national competitiveness.

Finally, under the current situation in Korea, the government's perception of the seriousness of the climate crisis and its willingness to achieve a shift in the socioeconomic system are more important than the role of ICTs. This is because new technologies alone cannot solve problems without clear goals and a specific roadmap for a decarbonised society.

Action steps

The following steps are important for South Korea:

- The government should clearly set goals for reducing greenhouse gas emissions and come up with a specific roadmap to implement them in accordance with the IPCC recommendation.

- The Korean New Deal should be a plan to turn the social and economic system around in a way that is aligned with people's rights, and to that end, discussions should be held with all stakeholders, including local residents, civil society and workers.

- In the course of the climate crisis response, ICTs should be introduced in a way that addresses problems but does not infringe on human rights and minimise the negative impact of ICTs on the climate crisis.

Technology, the environment and a sustainable world: Responses from the global South

The world is facing an unprecedented climate and environmental emergency. Scientists have identified human activity as primarily responsible for the climate crisis, which together with rampant environmental pollution, and the unbridled activities of the extractive and agricultural industries, pose a direct threat to the sustainability of life on this planet.

This edition of Global Information Society Watch (GISWatch) seeks to understand the constructive role that technology can play in confronting the crises. It disrupts the normative understanding of technology being an easy panacea to the planet's environmental challenges and suggests that a nuanced and contextual use of technology is necessary for real sustainability to be achieved. A series of thematic reports frame different aspects of the relationship between digital technology and environmental sustainability from a human rights and social justice perspective, while 46 country and regional reports explore the diverse frontiers where technology meets the needs of both the environment and communities, and where technology itself becomes a challenge to a sustainable future.

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