

# FRESHER

FORESIGHT AND MODELLING FOR EUROPEAN HEALTH POLICY AND REGULATION

## FRESHER Health Scenarios

### Scenario "We will health you"



Today's priority is to guarantee **access to adequate health care for European citizens**. Governments and the private sector collaborate closely to maintain a **healthy workforce** and NCDs under control, with the aim of ensuring the continuation of **economic productivity as well as the sustainability of the healthcare systems**. Thanks to big data, public and private investments effectively influence citizens' behaviour towards healthy lifestyles. By offering **healthy working environments** and care services employers compete to attract talented, motivated and well-educated people. On the other hand, thanks to **fair labour legislation**, employees increasingly have the means, including money, time and knowledge to take better care of their own health. **This top-down approach is accompanied by ambient 24/7 surveillance measures and a high degree of regulation and control of individual behaviours** through personal implanted chips. However, renouncing privacy is considered a small price to be paid for the advantages offered by tele-medicine and tailor-made diagnostics and treatment.

EU countries enjoy a **new era of economic growth and social progress founded on education, innovation and full employment, thanks to important government action**, and the "European model" stands out in an increasingly competitive world. Environmental sustainability is in the background as efforts are focused on producing and delivering more to everyone, without any paradigmatic change in production and consumption. This leads to the continuous outbreak of environmental emergencies (floods, cyclones, heat waves), the exacerbation of pandemics and the increase in economic and environmental migrants. Migrants from non-EU countries are only let in following very restrictive migration policies that take into consideration their skills and their possible contributions to the EU economy's growth.

#### Snapshots – We will health you – Winston

- ✓ I wake up after 6-8 hours of monitored sleep, I take the company bus to go to work and when I arrive the first thing I do is download the data from my implanted microchip, to ensure that I am not negatively affecting my health status and productivity performance with my lifestyle.
- ✓ My friends are my colleagues. With them I eat healthy and nutritious food in the canteen and go spinning in the company sport centre during work breaks.
- ✓ Thanks to being highly-skilled and continuous training, I programme the fully automated assembly line of a European trucks company. I do not have much spare time, but my salary is fully satisfying and similar to that of my boss.
- ✓ When I feel sick, I first report to the company doctor, who, when necessary, refers me to the public healthcare system.
- ✓ I use the apps to sort out everyday life problems and for online training courses.

Trends	Evolution*	Snapshot 2050
<a href="#">Equity</a>	↑↑	<b>In a competitive world, equity is reached in the EU</b> by ensuring that economic growth leads to (some) social progress. In Europe, equity is improved thanks to the <b>new wave of economic growth and targeted redistribution policies</b> .
<a href="#">Technological change and economic innovation</a>	↑↑↑	Europe is a <b>dynamic and innovative economy competing with emerging economies' cost advantage by delivering high-quality goods and services</b> . The European knowledge society, led by a top-down approach makes the <b>most of technological advancements</b> although the boost in productivity does not entail <b>any radical changes in the production system</b> .
<a href="#">Innovation in medicine</a>	↑↑↑	<b>Breakthrough in personalised medicine</b> . Thanks to government-managed big data, implanted chips and gene scans personalised prevention and treatment, including tissue regeneration, are accessible.
<a href="#">Citizen empowerment</a>	↑	Uniform society in which on line <b>information is strictly controlled</b> . A new order is set in the digital world, now governed by an alliance of governments, industries and citizens' representatives <b>to serve public policy goals</b> .
<a href="#">Climate change and decarbonisation</a>	↓↓	<b>Growth beyond environmental limits</b> . Increases in production and consumption put pressure on ecosystems. Green investments are only undertaken if economically profitable.
<a href="#">Demographic Change and migration</a>	↑↑	Europeans are old but healthy and work longer to sustain themselves and to be part of the work-oriented society. Migration rises but the EU accepts only those who can match the qualification needed in the EU economy.
<a href="#">Urbanisation</a>	↓	Cities are the engine of growth and first and foremost place to work. <b>Urban planning aims at offering the optimal condition to work (housing, transport and health services) and disregard everything that is not related to productivity, including environmental issues</b> .
<a href="#">Agriculture and global food chains</a>	↑↑	<b>Industrialised agriculture</b> . There is widespread use of chemicals and biotechnologies to increase agricultural production. Food is produced in laboratories and diets are monitored to ensure the intake of balanced nutrients.

Please note: These arrows reflect the possible change of each trend in the scenario, in comparison to the *status quo* of the trends **in Europe**. You can click on the trend name for a quick link to the trend description in this scenario.

## Scenario “We will health you” – Storyline

**Europe is an equitable society.** European governments have undergone a series of structural reforms to **relaunch growth**. Following the OECD “Going for Growth framework”<sup>1</sup>, public policies have reformed the sectors related to product and labour market regulation, education and training, tax and benefit systems, trade and investment rules and innovation policies. **Measures to facilitate wage adjustments and reduce labour costs have fostered job creation**. The difference between low and very high earnings and the uneven distribution of capital income has been mitigated thanks to taxation and economic reforms<sup>2</sup>. **Social policy is well designed to guarantee universal access to services and public goods, such as education and healthcare**. Education represents a life-long learning process crucial to continuously enhance citizens’ work skills<sup>3</sup>. Pay gaps have been closed and there is not much difference in salary throughout the lifetime and among professions and social groups. The gender pay gap has disappeared. Tax evasion is almost defeated thanks to high level of monitoring through digital advances, including the use of big data by the government. The unemployment rates of older people are on the same level as other age groups. Consequently, the Gini Index has decreased for European countries, but not in all world regions. In Europe, poverty rates are low and access to health services is ensured. In addition, the national health systems are using individual health data to regularly monitor the level of public health and health research is also using such data to develop counter measures if necessary or improve treatment, prevention and care.

**Robots and employees go hand in hand.** The **European economy** is very **dynamic** and **innovative**, with industries gaining a lead market in some niches. Through innovation and the creation of new industries, new job opportunities emerge to offer employment opportunities to those whose jobs have been displaced through increased automation<sup>4</sup>. By offering high-quality goods and services, Europe enhances its global competitiveness in relation to emerging economies that exploit instead their cost advantage. Firms across all sectors of the economy are mainly **digitalised and highly interconnected**. Data collection and management on both the production and consumption side allows for **increased efficiency** and meeting an **increasing differentiated demand for goods and services**. The Internet of Things<sup>5</sup>, which allows for connecting basically any devices to the internet, is a widespread reality and offers new opportunities for business models, products and services.

The **increases in productivity** due to digitalisation are **fairly shared through a balanced social dialogue between firms and workers**, leading to better working conditions overall. For example, parental leave for both men and women is fully integrated in social security scheme for all workers and a well-planned **social safety net** deals with temporary short-term structural unemployment. The general aim is **to foster productivity and keep the workforce as healthy** as possible. However, the introduction of ICT in workplaces lead to a situation where surveillance devices do not only monitor health for workers’ private use. **Many companies also monitor if their employees** have healthy life styles, stay away from drugs or abuse of alcohol, for example.

**European medicine is personalised for treatment.** Public budget allocation sets the target of medical R&D above 3% of GDP. **Health research is led and well-coordinated by public bodies at a European level, fostering collaboration and synergies across countries as well as partnerships with private companies**. Being oriented to meet the most urgent health priorities, significant discoveries and developments have come in the field of ‘**Omics**’ medicine<sup>6</sup>. Therefore, personalised healthcare since birth plays a fundamental

1 See the website: <http://www.oecd.org/eco/growth/goingforgrowth.htm>

2 EC, 2012 b; Piketty, 2014.

3 In reference to the Amartya Sen’s concept of capability

4 ESPAS, 2015.

5 Hersent, 2011

6 “Omics is the study of particular types of information (such as, for example, genomics), typically on a complete or massive scale”. Definition from the website: <http://precisionmedicine.ucsf.edu/content/omics-medicine>



role in prevention and in treatment, which include regeneration of tissue. **New-born babies get a gene scan** to find out what their predispositions are and the gene scan is run in a microsimulation model, taking all kinds of environmental factors into account. According to the results of the scanning, **a life-long health plan is worked out for the child and adjusted throughout life according to changing parameters**. Implanted chips help to monitor health status throughout the life course and develop **personalised treatment, including personalised drugs**. Data from chips and health apps are used by the public health sector to strengthen health research and advancements in treatment. **Virtual healthcare** has become a reality thanks to fast digitalisation. Online health visits increase to lower the pressure on hospitals and healthcare centres, allowing for daily check-ups<sup>7</sup>. Micro-robots allow surgery to intervene on most pathologies<sup>8</sup>. New drugs, micro-surgery, other treatments and medical devices are **largely affordable because the drug pricing framework has been reformed to reflect a fair balance between intellectual property and public health rights**. Capped prices, attentive regulation on patents that allows for the production of generic drugs few years after the discovery and public-private partnership to finance investment in medical research lower the monopoly and power of big pharma on medical innovation. To access public funds many companies subscribe voluntary agreements on tiered prices and short-term patents release<sup>9</sup>. The WHO gains a stronger role in orienting medical research and regulating equitable access to the latest innovations and key drugs<sup>10</sup>.

In such a way, the returns to R&D investment in terms of human lives are high and also monetary returns for private investors are ensured to some extent by government funding.

**High control for the good of society.** After major security crises, the EU institutions has **enforced public control of what is online**, to avoid dilution or manipulation of information, but also to spread key political messages. People are not free to share or access everything online as a **government body checks for reliable information but ends up censoring to some extent**. The use of the internet is shaped to serve the social goals and priorities set at government level. **Social media is used by almost everybody** and present in every sphere of life, conveying the impression that people can access all information and knowledge. Though most people in the EU have a **high degree of digital skills**, they stick to their favourite digital communities to discuss national, regional issues rather than engaging in full-blown political debates. Social media and all kinds of ICT are also frequently used for educational purposes for children and adults. Education is seen as life-long learning, training on and off the job is supported by employers.

**An implanted chip monitors individual health.** It started as a measure to keep each citizen well informed regarding benefits and drawbacks of their lifestyles but it has transformed into a surveillance system: any unhealthy behaviour is detected and may lead to fines. **Alignment to the proper health behaviour credo is much appreciated in society and by employers**. Off-path behaviour can increase personal health costs considerably. For example, smoking or a lack of physical activity increases the social insurance contribution significantly. By law, **governments strictly control big data, the use of which for economic purpose is allowed for companies only in exceptional cases and to develop synergies between business and government actions**.

**Environment is undermined by the growth paradigm.** Given the focus on ensuring productivity rises, **actions to lower CO2 emissions have constantly been postponed and not given first priority**. People consume more as they are wealthier, pressuring waste and water management systems. Economic growth is pursued **without taking into consideration the limits of natural resources and environmental protection**. Environmental requirements and regulations on industrial activities have been loosened in order to allow

<sup>7</sup> NHS, 2009

<sup>8</sup> Martel, 2012

<sup>9</sup> KCE, 2016; Vella and Wilson, 2017

<sup>10</sup> NHS, 2009.

companies to produce at a faster pace, stay competitive and invest in the improvement of working conditions. Therefore, **the industrial structure has not undergone a green transformation** for cleaner production processes. There is higher employment of machineries in production, which raises companies' energy consumption, but investments in green technologies have been hindered by the need to keep costs low and are undertaken only when these technologies effectively allow for consistent energy saving. The transport sector has grown, pulled by a steady rise in the demand, but without a significant introduction of electric vehicles and low-emission technology. Overall, energy consumption has increased, but without a substantial diffusion of renewables in the European generation profile<sup>11</sup>. Under the pressure of keeping growth rates high, **international agreements on climate change have been watered down**, so only minor progress is made in tackling this challenge.

The effects of climate change are dramatic in certain areas of the planet, causing more and more extreme events that lead to increases in mortality in those areas and migration waves to the EU. Global warming keeps worsening and heat waves multiply in Europe, where cardiovascular diseases rise due to warmer temperatures<sup>12</sup>.

**Old happy workers.** Due to **revised welfare schemes and people working longer**, the dependency ratio is kept under control and social security finances are sustainable. **Governments and private companies are keen to keep their workforce healthy and happy for as long as possible.** The **continuous control from the government and the companies** allows the protection of? citizens' health and, especially for the elders, to intervene promptly when emergency health issues, such as heart attacks or strokes, arise. The state monitors the health status of the population through microchips implanted to everyone at birth, to avoid excessive costs of having unhealthy aging populations who are not able to work. Companies have adapted work conditions and work places to the needs of elderly people. Most places have their own canteen and offer medical services, as well as sports and leisure facilities which, in turn, enhance profits through enhanced satisfaction and productivity of workers. **However, once people retire, they are not fully able to take care of themselves and to engage extensively in social life, resulting in their marginalisation and the need to refer to healthcare systems more often.**

**Migration waves to the EU have increased, also as a result of climate change and people are forced to leave entire areas of the planet.** Europe struggles to regulate and deal with continuous emergencies. **Migration flows are very restricted** and only those who have a high level of education and match the qualifications needed at EU workplaces get a visa with work permit, enter the formal labour market and contribute to social security.

**Cities, a space to work.** Inspired by a **vision of offering a good work-life balance**, European, national, regional and local authorities collaborate to relaunch European cities. **Urban planning aims at guaranteeing access to housing and essential services while mobility plans regulate daily travelling, especially for commuters.** **New social houses** for workers are built on the outskirts of cities where green areas are sacrificed for building infrastructures and roads. Ensuring good transport to reach work is a top priority pursued with a strictly regulated traffic management systems and high investment in road infrastructures and public transport service. **Security and road safety is ensured through constant ambient surveillance** but there is little opportunity to enjoy public space or walk in open air. **Big indoor leisure centres and shopping malls are the core of social life** and include recreational activities like theatres, cinemas and gyms along with shops. To promote satisfaction at work, many companies and public institutions **have their own private gyms and kinder-gardens and sponsor employers transport programs** with self-driving mini-vans.

<sup>11</sup> EC, 2016 a.

<sup>12</sup> Whitmee et al., 2015.

**The extensive transport network is affordable but not environmentally friendly.** The social goals in housing and transport are realised without taking into consideration **air quality and environmental issues**. Thus, **traffic congestion is reduced while air pollution is often at dangerously high levels**. **Physical activity is practiced mostly indoors of big air-conditioned fitness centres**, which in turn further increase combustion and air pollution.

**Europeans' diet is strictly regulated.** European agriculture has followed the route of **industrialisation and intensification to increase production** and meet the rising demand for food while facing scarcity in land and water availability. Land productivity has increased through the use of **chemicals and innovative biotechnology** supported by public subsidies and provided by big companies. Requiring high-capital inputs, the agriculture sector is organised according to large-scale units of production. GMOs are commonly produced and consumed, although strict government controls monitor their effect on human health. To ensure the correct intake of nutrients of citizens and since the ecosystem is worsening for natural food production, **meat is produced largely in laboratories<sup>13</sup>, along with high protein bars and vitamins pills**, and made largely affordable by government subsidies. Canteens in both private companies and public offices serve balanced meals to workers that respect the WHO/FAO dietary targets whereas the cost of this service is contained by lowering the attention paid to food provenience. Indeed, **food and drinks are given a value only as means of survival and health promotion of the workforce**. For this reason, people's diets are highly regulated and constantly monitored both by the government and by the employers. In a context of increasing globalisation, free trade agreements for food and drinks are designed to protect European agriculture and regulate global food supply chains. These chains are dominated by Transnational Food Companies, which provide affordable but highly processed food and drinks. However, government regulation is attentive to discourage consumption of unhealthy products, imposing high taxes on food and drinks that are rich in sugar, salt and fats.

Thanks to the government control and partnership with private companies to ensure food security to all, Europeans maintain largely healthy diets, which are balanced in terms of nutrients and limit the consumption of salt, fats and sugar<sup>14</sup>. Also alcohol and tobacco consumption is strictly regulated by law and thus strongly limited.

<sup>13</sup> See the conference website: <http://futurefood2050.com/can-lab-grown-meat-reduce-food-insecurity/>

<sup>14</sup> Stuckler, 2008.

## Bibliography

- Baumol, W. J. (2012). *The Cost Disease: Why Computers Get Cheaper and Health Care Doesn't*. Yale University Press: New Haven and London.
- Bock, A.-K., Maragkoudakis, P., Wollgast, J., Caldeira, S., Czimbalmos, A., Rzychon, M., Atzel, B., and Ulberth, F. (2014). Tomorrow's Healthy Society. Research Priorities for Foods and Diets. JRC Foresight Study. Available online at: <https://ec.europa.eu/jrc/sites/jrcsh/files/jrc-study-tomorrow-healthy-society.pdf>
- Brynjolfsson, E. and McAfee, A. (2015). Will Humans Go the Way of Horses? Labor in the Second Machine Age. *Foreign Affairs*. July/August 2015 Issue. Available online at <https://www.foreignaffairs.com/articles/2015-06-16/will-humans-go-way-horses>
- Chaytor, S. and Staiger, U. (2012). Future of Healthcare in Europe – Meeting future challenges: Key issues in context. UCL Policy Briefing. Available online at: <https://www.ucl.ac.uk/public-policy/for-policy-professionals/research-insights/FHE-print.pdf>
- De Blasio, B. (2016). Healthier Neighbourhoods Through Healthier Parks. *The Lancet*, 388 (10062), pp. 2850–2851.
- EEA (2006). Urban sprawl in Europe. The ignored challenge. EEA Report no. 10/2006.
- EC (2012 a). Active Ageing. Special Eurobarometer 378. Available online at: [http://ec.europa.eu/public\\_opinion/archives/ebs/ebs\\_378\\_en.pdf](http://ec.europa.eu/public_opinion/archives/ebs/ebs_378_en.pdf)
- EC (2012 b). Employment and Social Developments in Europe 2011. Available online at: [file:///C:/Users/oem/Downloads/ESDE\\_2011\\_web\\_4.1.2012.pdf](file:///C:/Users/oem/Downloads/ESDE_2011_web_4.1.2012.pdf)
- EC (2014 a). Digital Skills and inclusion – Digital Agenda Scoreboard 2014. Available online at <file:///C:/Users/oem/Downloads/DigitalinclusionandskillsintheEU2014PDF.pdf>
- EC (2014 b). Measuring Digital Skills across the EU: EU wide indicators of Digital Competence. Available online at <https://ec.europa.eu/digital-single-market/en/news/measuring-digital-skills-across-eu-eu-wide-indicators-digital-competence>
- EC (2014 c). The 2015 Ageing Report. Underlying Assumptions and Projection Methodologies. European Economy 8|2014. Available online at: [http://ec.europa.eu/economy\\_finance/publications/european\\_economy/2014/pdf/ee8\\_en.pdf](http://ec.europa.eu/economy_finance/publications/european_economy/2014/pdf/ee8_en.pdf)
- EC (2016 a). *EU Reference Scenario 2016. Energy, Transport and GHG Emissions. Trends to 2050*. Brussels: European Commission Publications Office.
- EC (2016 b). Digital Futures. Final Report. A Journey into 2050 visions and policy challenges.
- EEA (2014). Waste prevention in Europe — the status in 2013. EEA No 9/2014. Available online at: [file:///C:/Users/oem/Downloads/EEA%2009%202014%20Waste%20prevention%20\(1\).pdf](file:///C:/Users/oem/Downloads/EEA%2009%202014%20Waste%20prevention%20(1).pdf)
- EEA (2015). Air Quality in Europe – 2015. EEA Report No 5/2015. Available online at [file:///C:/Users/oem/Downloads/Air%20quality%20in%20Europe%20-%202015%20report%20\(1\).pdf](file:///C:/Users/oem/Downloads/Air%20quality%20in%20Europe%20-%202015%20report%20(1).pdf)
- EPHA (2016). Agriculture and public health Agriculture's impacts on public health. Available online at: [https://epha.org/wp-content/uploads/2016/05/Agriculture-and-Public-Health\\_EPHA\\_May2016-2.pdf](https://epha.org/wp-content/uploads/2016/05/Agriculture-and-Public-Health_EPHA_May2016-2.pdf)
- ESPAS (2015). Global Trends to 2030: Can the EU meet the challenges ahead?. Available online at: <http://ec.europa.eu/epsc/sites/epsc/files/espas-report-2015.pdf>
- EXPH (2015). Disruptive Innovation. Considerations for health and health care in Europe. EC Public Opinion. Available online at: [http://ec.europa.eu/health/expert\\_panel/sites/expertpanel/files/012\\_disruptive\\_innovation\\_en.pdf](http://ec.europa.eu/health/expert_panel/sites/expertpanel/files/012_disruptive_innovation_en.pdf)



- EU SCAR (2015). Agricultural Knowledge and Innovation Systems. Towards the Future – a Foresight Paper. Available online at: [https://ec.europa.eu/research/scar/pdf/akis-3\\_end\\_report.pdf](https://ec.europa.eu/research/scar/pdf/akis-3_end_report.pdf)
- Freeman, R. B. (1999). Solving the New Inequality in Cohen, J. and Rogers, J. (eds.) *The New Inequality: Creating Solutions for Poor America*. Boston: Beacon Press.
- Giles-Corti, B., Vernez-Moudon, A., Reis, R., Turrell, G., Dannenberg, A. L., Badland, H., ...and Owen, N. (2016). City planning and population health: a global challenge. *The Lancet*, Vol. 388, pp. 2912–2924
- Hersent, O., Boswarthick, D. and Elloumi, O. (2011). *The Internet of Things: Key Applications and Protocols*. Second Edition. New York: Wiley.
- ISINNOVA, CEPS (2014). FLAGSHIP Policy Brief D1.3. Available online at [https://ec.europa.eu/research/social-sciences/pdf/policy\\_briefs/flagship-policy-brief.pdf](https://ec.europa.eu/research/social-sciences/pdf/policy_briefs/flagship-policy-brief.pdf)
- Khan, J. (2013). What role for network governance in urban low carbon transitions?. *Journal of Cleaner Production*, Vol.50, pp. 133-139.
- KCE (2016). Future Scenarios about Drug Development and Drug Pricing. KCE Report 271. Available online at: [https://kce.fgov.be/sites/default/files/page\\_documents/KCE\\_271\\_Drug\\_Pricing\\_Report.pdf](https://kce.fgov.be/sites/default/files/page_documents/KCE_271_Drug_Pricing_Report.pdf)
- Kleinert, S. and Horton, R. (2016). Urban design: an important future force for health and wellbeing. *The Lancet*, 388 (10062), pp. 2848–2850.
- Martel, S. (2012). Magnetic microrobots to fight cancer. *IEEE Spectrum*, September 25.
- McKinsey&Company (2016). Being Patient-Centric in a Digitizing World. *McKinsey Quarterly*. December 2016. Available online at: <http://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our-insights/being-patient-centric-in-a-digitizing-world>
- NHS (2009). *Fit for the Future. Scenarios for low-carbon healthcare 2030*. Available online at: file:///C:/Users/oem/Downloads/1260355467\_LNhx\_fit\_for\_the\_future%20(1).pdf
- OECD (2016). The economic consequences of outdoor air pollution. Policy Highlights. Available online at: <https://www.oecd.org/environment/indicators-modelling-outlooks/Policy-Highlights-Economic-consequences-of-outdoor-air-pollution-web.pdf>
- PASHMINA (2010). Pashmina Qualitative Scenarios. D1.1.
- Piketty, T. (2014). *Capital in the 21st Century*. Cambridge: Harvard University Press.
- Pollan, M. (2008). *In Defence of Food: An Eater's Manifesto*. New York: Penguin.
- RIVM (2014). A healthier Netherlands: Key findings from the Dutch 2014 Public Health Status and Foresight Report. Available online at: <http://eurohealthnet.eu/sites/eurohealthnet.eu/files/A%20healthier%20Netherlands%2C%20PHSF-2014.pdf>
- Sandmo, A. (1975). Optimal taxation in the presence of externalities. *The Swedish Journal of Economics*, 77(1), pp. 86-98.
- SPREAD Sustainable Lifestyles (2012). Scenarios for Sustainable Lifestyles 2050: From Global Champions to Local Loops. Available online at: [https://www.sustainable-lifestyles.eu/fileadmin/images/content/D4.1\\_FourFutureScenarios.pdf](https://www.sustainable-lifestyles.eu/fileadmin/images/content/D4.1_FourFutureScenarios.pdf)
- Stuckler, D. (2008) Population causes and consequences of leading chronic diseases: a comparative analysis of prevailing explanations. *Milbank Quarterly*, 86(2), pp. 273-326.
- The Academy of Medical Science (2016). Improving the health of the public by 2040. Available online at: <https://acmedsci.ac.uk/file-download/41399-5807581429f81.pdf>
- The Economist Intelligence Unit (2011). *The future of healthcare in Europe. A report from the Economist Intelligence Unit sponsored by Janssen*. London: The Economist Intelligence Unit Limited.

UK Government Office for Science – Foresight (2016). *Future of an Ageing Population*. Available online at: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/535187/gs-16-10-future-of-an-ageing-population.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/535187/gs-16-10-future-of-an-ageing-population.pdf)

UKERC (2014). Scenarios for the development of smart grids in the UK. Available online at: [https://orca.cf.ac.uk/57649/1/Scenarios for the Development of Smart Grids in the UK Synthesis Report%5B1%5D.pdf](https://orca.cf.ac.uk/57649/1/Scenarios%20for%20the%20Development%20of%20Smart%20Grids%20in%20the%20UK%20Synthesis%20Report%5B1%5D.pdf)

Vaughan-Whitehead, D. (2017). Curbing Inequalities in Europe – How Can Social Dialogue and Industrial Relations Help to Close the Gap?. Geneva: ILO. Available Online at: [http://www.ilo.org/wcmsp5/groups/public/---ed\\_protect/---protrav/---travail/documents/meetingdocument/wcms\\_544236.pdf](http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/meetingdocument/wcms_544236.pdf)

Vella, S. and Wilson, D. (2017). Access to Medicine: Lessons from the HIV response. *The Lancet*, 4(4), pp. e147-e149.

Walls, H. W., Cornelsen, L., Lock, K., Smith, R. D. (2016). How much priority is given to nutrition and health in the EU Common Agriculture Policy?. *Food Policy*, Vol. 59, pp. 12-23.

Watts, N., Adger, W. N., Ayeb-Karlsson, S., Bai, Y., Byass, P., Campbell-Lendrum, D., ... and Costello, A. (2016). The Lancet Countdown: tracking progress on health and climate change. *The Lancet*, November 2016.

Whitmee, S., Haines, A., Beyer, C., Boltz, F., Capon, A.G., Ferreira de Souza Dias, B., Ezeh, A., Frumkin, H., Gong, P., Head, P., Horton, R., Mace, G. M., Marten, R., Myers, S. S., Nishtar, S., Osofsky, S. A., Pattanayak, S. K., Pongsiri, M. J., Romanelli, C., Soucat, A., Vega, J. and Yach, D. (2015). Safeguarding human health in the Anthropocene epoch: report of The Rockefeller Foundation–Lancet Commission on planetary health. *The Lancet*, 386(10007), 1973-2028.

WHO (2010 a). A conceptual framework for action on the social determinants of health. Social determinants of health Discussion Paper 2. Available online at: [http://apps.who.int/iris/bitstream/10665/44489/1/9789241500852\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/44489/1/9789241500852_eng.pdf)

WHO (2010 b). Mental health and well-being at the workplace – protection and inclusion in challenging times. Available online at: [http://www.euro.who.int/\\_data/assets/pdf\\_file/0018/124047/e94345.pdf](http://www.euro.who.int/_data/assets/pdf_file/0018/124047/e94345.pdf)

WHO (2012). The European health report 2012 – Charting the way to well-being. Available at: [http://www.euro.who.int/\\_data/assets/pdf\\_file/0004/197113/EHR2012-Eng.pdf](http://www.euro.who.int/_data/assets/pdf_file/0004/197113/EHR2012-Eng.pdf)

WHO (2013). Health Literacy. The Solid Facts. Available online at [http://www.euro.who.int/\\_data/assets/pdf\\_file/0008/190655/e96854.pdf](http://www.euro.who.int/_data/assets/pdf_file/0008/190655/e96854.pdf)