NUI Galway
OÉ Gaillimh

IETSBIO³ Policy Brief series: No. 2 – 25.04.2019

Further reading:

- National Policy Statement on the Bioeconomy 2018
- The Sustainable Development Goals
- The Sustainable Development Goals National Implementation Plan 2018-2020
- Measuring Progress: The Sustainable Progress Index 2019
- Our Sustainable Future 2012

For enquires contact:

Prof. Piet Lens
Established Professor
NUI Galway
piet.lens@nuigalway.ie

Dr. Harish Ravishnakar
Postdoctoral Researcher
NUI Galway
harish.ravishankar@nuigalway.ie

The content and views included in this policy brief are based on independent, peer-reviewed research and solely belongs to the authors and do not reflect the position of the Institute or the University.

Acknowledgments: *The authors acknowledge the contributions of Pádraic Ó hUiginn. This policy brief was prepared through the SFI Research Professorship Scheme awarded to Prof. P. Lens at NUI Galway.*

Science Foundation Ireland sfi For what's next

Ryan Institute

Achieving Sustainable Development Goals (SDGs) through Ireland's bioeconomy

Background

Today's world is more inter-connected than ever. The challenges that are being faced have transcended globally and require joint action. To address this, the United Nations has set Sustainable Development Goals (SDGs) for collective progress by the world's nations. The 17 SDGs set are designed to build a better world for the people and planet by 2030.

Ireland has been an active participant on the global stage and has been a proactive member of the European Union and the United Nations. However, the 2008-2009 global financial crisis and recession de-railed Ireland's progress. A decade after the great recession, Ireland has successfully driven its growth through improvement of the public finances, with continued focus on increasing food and other exports and on attracting overseas direct investment, all leading to economic recovery and increased employment.

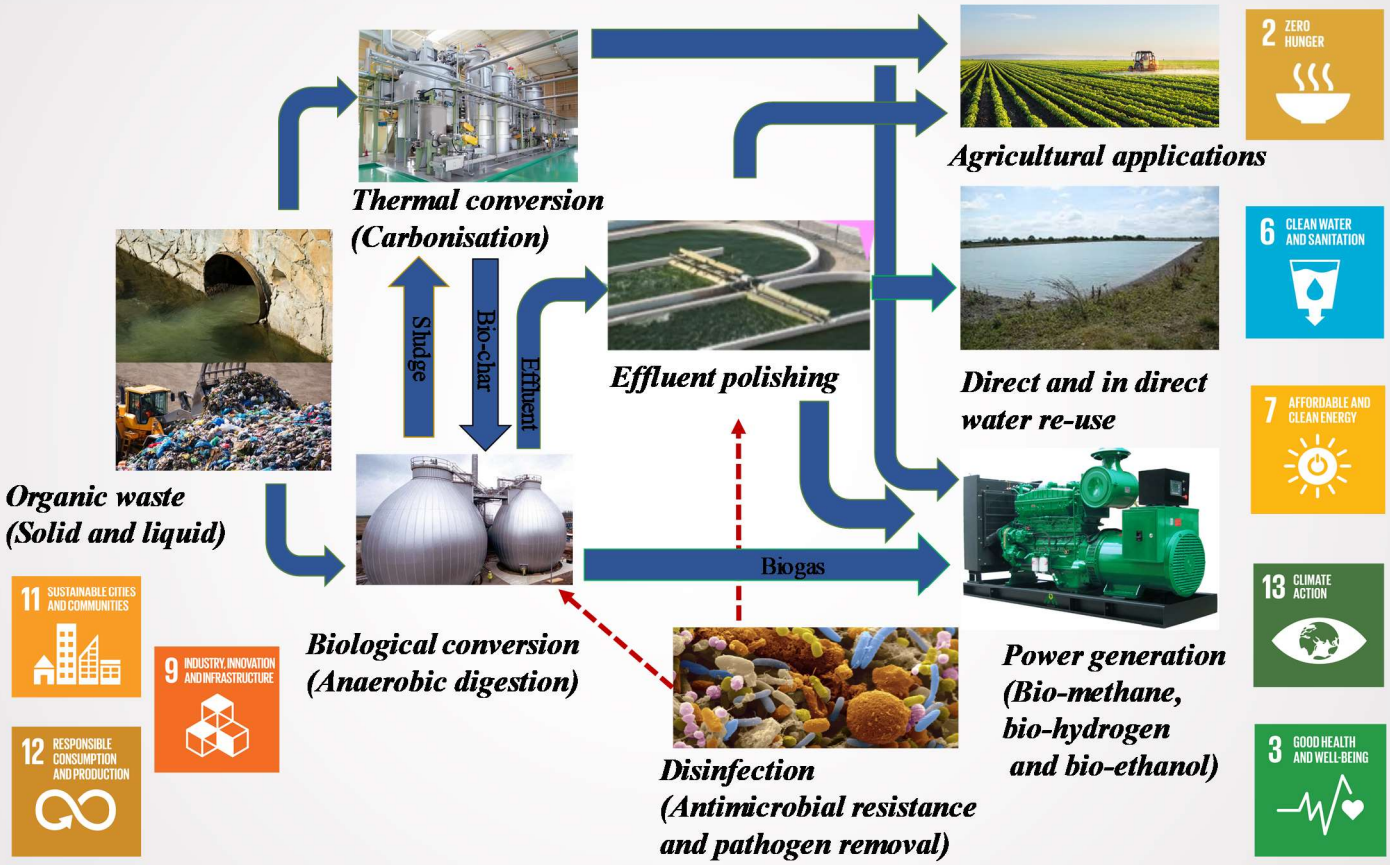
Since the adoption of the SDGs in 2016, Ireland has been tracked on its progress on achievements of the goals. This has led to the development of "The Sustainable Development Goals National Implementation Plan 2018-2020" that outlines the whole of the government approach to implement the 17 SDGs through relevant national policies. The plan aligns with the existing national Sustainable Development Strategy: *Our Sustainable Future 2012* that sets out eight themes and principles for achieving sustainable development in Ireland.

Bioeconomy and SDGs

2018 saw the release of the first National Policy Statement on the Bioeconomy. This was based on a new economic model built on two key pillars: low carbon growth and resource efficiency. The policy focuses on increasing use of renewable biological resources and recovery/conversion of waste materials/streams to valuable products. Through the Bio- Éire project, it is sought to identify and quantify Ireland's bio-resources, raw materials and value chains that should be pursued. This policy intrinsically threads the core of a circular economy which is the key element of Ireland's sustainability strategy. The preparation of a bioeconomy roadmap aims to bring policy coherence across different sectors and also progress towards meeting the SDGs set out through "The Sustainable Development Goals National Implementation Plan". The opportunity offered by the National Policy Statement on Bioeconomy, together with the right investment and collaborations between the public sector, start-ups, SMEs and research organisations can propel Ireland's innovation capabilities and can ultimately transfer into real applications.

Innovative Technologies for the future

Innovative technologies allied to biological processes can produce bio-based renewable fuel sources and value added bio-based products, thereby helping to achieve sustainable practices. One such scheme developed is shown below. The scheme shows the potential application of different technologies that can promote water security and tackle socio-economic challenges as well as climate change. Along with addressing the different challenges, integration of these technologies can help to achieve the key SDGs, which includes zero hunger (SDG 2), clean water and sanitation (SDG 6), affordable and clean energy (SDG 7), industry, innovation and infrastructure (SDG 9) sustainable cities and communities (SDG 11), responsible consumption and production (SDG 12), health and wellbeing (SDG 3) and climate action (SDG 13). Translation of the proposed scheme into the real world involves collaboration between research institutions (academia), industry and governments through successful pilot demonstrations and full scale applications. Such innovation and implementation can bolster Ireland as a leader in bioeconomy along with showcasing its ability to achieve SDGs at home and support them globally.



***Scheme**: Wastewater treatment and solid waste processing are key in achieving a sustainable bioeconomy.*

Images used for the scheme are based on fair usage policy. Reference links for each image can be found below:

- https://www.geograph.org.uk/photo/1425181
- https://www.indiamart.com/proddetail/diesel-generator-8665343848.html
- http://themocracy.com/3-things-to-know-about-microbial-communities/
- http://resources.hartfordtechnologies.com/blog/applying-stainless-steel-balls-to-agricultural-applications
- http://www.irishnews.com/business/2016/06/21/news/-23m-world-first-anaerobic-digestion-plant-in-ballymena-will-deal-chicken-waste-problem-571669/
- https://blog.private-sector-and-development.com/2012/10/22/municipal-solid-waste-turning-a-problem-into-resource/
- http://www.pollutionissues.com/Ve-Z/Wastewater-Treatment.html
- https://www.mobiusenviro.com/tire-technologies-pyrolysis-retreading/tyre-carbonisation