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1. Introduction

The 2030 Agenda for Sustainable Development was established by the United Nations in 2015 as a result of the adoption of 17 Sustainable Development Goals (SDGs) that provide a framework to evaluate how health (SDG 3: Good Health and Wellbeing), social equity, and environmental sustainability (SDG 6: Clean Water and Sanitation) are interconnected as areas of policy (UNDP, 2025). This report is an examination of how SDG 3 and SDG 6 impact upon the health and wellbeing outcomes for citizens in the UK, along with the evaluation of how effective national and local initiatives are that have been developed to achieve the aforementioned SDGs. The report begins with an examination of both the conceptual and empirical relationships between quality of water, sanitation, and health outcomes. The second part of this report evaluates two examples of national initiatives that aim to positively impact on the health inequalities of the citizens of the UK: NHS/Office for Health Improvement and Disparities (OHID) approach to health inequalities; and Storm Overflows Discharge Reduction Plan (SODRP) and Water Industry National Environment Programme (WINEP). The next section of this report contains a local case study of the Windermere catchment in Cumbria and explores whether the national ambitions associated with achieving the SDGs are reflected in place-based outcomes. Finally, this report concludes with recommendations that are based on the evidence and a short summary (Kshatriya et al., 2026).

2. SDG 3 and SDG 6: Analysing the Impact on Health and Wellbeing

The third sustainable Development Goal, 'Ensure healthy lives and promote well-being for all at all ages', defines 13 Targets related to maternal and child mortality, accidents, communicable and non-communicable diseases, mental health, Universal Health Coverage and resilience to environmental risks. However, as noted by custodians of the SDG, progress against SDG3 is not on track globally, with only a small percentage of targets considered on track and moderate progress being made against a number of targets that are expected to meet the 2030 deadline. In the UK, the SDG3 is delivered mainly through the National Health Service (NHS) and also through the Office for Health and International Development (OHID), which sits in the Department of Health and Social Care and works to 'level up on health inequities so there is no connection between someone's background and their expectation of being healthy' (Chiu and Ben, 2023).

The Sustainable Development Goal (SDG) number six (6) is about ensuring 'availability and sustainable management of water and sanitation for everyone' and has a number of targets, including (6.1) safe accessible drinking water, (6.2) sanitation and hygiene, (6.3) quality and pollution of water sources, (6.4) efficiency of water use and (6.6) protection of aquatic ecosystems. While the UK has very high levels of access to safe drinking water and sanitation, the targets set in this description for quality of water are not being met in the UK. For example, very few rivers in England achieve 'good ecological status', and there are thousands of occurrences of untreated or partially-treated sewage being discharged into rivers, lakes and coastal water through storm overflows. This has a direct effect on SDG 3 because these two goals are explicitly linked in guidance from the United Nations, which describes factors leading to decreased water quality (i.e., unsanitary sanitation systems, discharge of wastewater, runoff from agricultural operations) to include direct impacts on the incidence of waterborne diseases, illnesses associated with using recreational water, and community health (United Nations, 2018).

There are three ways in which health is impacted. The first is through the direct transmission of pathogens through stormwater outflows which can deposit an inundation of sewage into a waterway used for multiple recreational activities: swimming, paddling, etc. Campaigners have documented the repeated occurrence of harmful algae blooms along with pollution incidents that contribute to an increased risk of gastrointestinal illnesses at frequently used swimming areas, such as Windermere. Furthering health impacts of populations that utilize water resources for their physical and mental well-being is that access to clean waters is diminished when water quality is compromised. Under Sustainable Development Goal 3 (SDG 3) all micro and macro factors that impact a person's overall health, including mental health and

environmental attachment are considered part of achieving this goal (Gaffield et al., 2003). Thus, the mental and physical harm that polluted rivers and lakes incur upon individuals is not only evident from a direct health-risk but also that of the social and economic factors. As such, health cannot be addressed by public health or health-care departments alone but must be addressed through an inter-sectoral approach. How this relates specifically to SDGs 3 and 10 is as follows: individuals that live in poverty or live in coastal communities are likely to reside within close proximity of decaying infrastructure and combined sewer networks and are subjected to the social and economic determinants that cause the differences in healthy life expectancy, which the Office for Health Improvement and Disparities (OHID) articulate as 19-20 years between the most and least deprived areas of the UK. Therefore; SDG 3 cannot be viewed solely through clinical, NHS-based lenses; positively impacting SDG 3 will require consideration of environmental (Ejiohuo et al., 2024).

3. Evaluating National Initiatives

3.1 SDG 3: OHID, the NHS and the health-inequalities agenda

The establishment of OHID on October 2021 resulted from the transition of some of the work previously done by Public Health England to additionally focus on a mandate driven by a reduction in health inequities. The most visible example of the ability to deliver on this new mission is through the introduction of the Health Inequalities Dashboard that tracks approximately 20 health inequity indicators based on the Public Health Outcomes Framework. The most current data demonstrating these indicators suggest that the differences of healthy life expectancy between the most deprived and least deprived areas in England have remained largely unchanged since a baseline established for the development of the dashboard from 2013 to 2015 (of approximately 19 to 20 years) and that differences in physical inactivity and premature cardiovascular mortality as a proportion of the population have greater disparities following COVID-19 than prior to the pandemic (and on the continuum of health inequity indicators tracked via the Health Inequalities Dashboard). Monitoring is an effective function (insofar as data are more granular and compared to data generated by predecessor organisations) (GOV.UK, 2021). There is insufficient evidence to demonstrate an attributable relationship between monitoring and closing the gap between the most and least deprived residents in England since measurement without a statutory target reduction or dedicated funding stream will not close the gap. Survey data from the Royal College of Physicians indicate that approximately 72% of respondents had treated more patients whose conditions were attributable to or worsened by the impacts of social determinants of health within the previous three months and that both the Royal College of Physicians and the Health Equals coalition have sought a health equity strategy across all government departments as OHID has limited capacity to address housing, income and employment as determinants of health (Robinson et al., 2025).

3.2 SDG 6: the Environment Act 2021, the Storm Overflows Discharge Reduction Plan and WINEP

The Environment Act 2021 made the Secretary of State legally required to create a plan for reducing discharges from sewage storm overflows. This plan is related to a statutory duty of water companies to continuously monitor water quality around their sewage outfalls. As a result of the Enforcement Act 2021, water companies are now required to stop all forms of environmental harm caused by storm overflows by 2050, and address deficiencies at the worst-performing locations as soon as possible.

On the positive side, all of England is currently covered by a near-complete Event Duration Monitor dataset of storm overflow discharges (Carver and Bolton, 2025). This will allow campaigners and the government to see that England has the highest level of transparency in the world for storm overflow discharges. The Investment Period (2020-2025) had over £3.1 billion spent across all companies for storm wastewater sewer improvements; most companies will have met or exceeded their own individual wastewater sewer discharge targets. The Thames Tideway Tunnel, which will be finished in 2025, is expected to reduce the number of tonnes of untreated wastewater entering the tidal Thames by approximately 95% (Office, 2023).

However, the results of the data show that there is some evidence that the program was a failure. According to statistics from the Environment Agency, there was only a small decrease (2.9%) in the number of sewage spills from 2023 to 2024 and the total time of sewage spills had increased (0.2%) in that same period; therefore, the Environment Agency has stated that the number of sewage spills and total duration of sewage spills remains unacceptably high. One additional problem noted by commentators is that the metrics used to measure the results are based on the number of discharges rather than the volume of wastewater discharged (Environment Agency, 2025).

4. Evaluating a Local Initiative: the Windermere Catchment

Lake Windermere is located in the Lake District National Park and exemplifies the potential and limitations of implementing national policy at a local level. Lake Windermere is home to over 14,000 people, attracts approximately seven million visitors each year and generates an estimated £750 million for the local economy. However, the lake has also been affected by recurrent blooms of toxic algae attributed primarily to elevated phosphorus levels resulting from the wastewater treatment plants operated by United Utilities and from private septic systems (Federica Bedendo, 2025).

In 2025, the UK Government; United Utilities; the Environment Agency; Ofwat; the Lake District National Park Authority; Westmorland and Furness Council; and two campaigning groups, Save Windermere and Love Windermere, established the 'Only Rainwater' Coalition and commissioned a feasibility study on how to completely eliminate all forms of sewage discharge from the lake. Additionally, United Utilities committed to investing £200 million in upgrading nine wastewater treatment plants and mitigating the impact from six storm overflows. This cooperative approach demonstrates how SDG 6, target 6.b calls for enhanced participation of local communities and relevant stakeholders in the sustainable management of freshwater resources and suggests real progress has been made in achieving collaboration amongst regulators, local government and civil society. However, independent scrutiny indicates that the outcomes associated with this initiative have been inconsistent. For example, Save Windermere reported that during the past 20 years United Utilities has only completed one private-sewage connection in the Lake Windermere catchment and has connected only 27 properties (Vinter, 2025).

5. Recommendations

From these evaluations, four recommendations have been made. Firstly, health inequality policies for Sustainable Development Goal 3 itself require a statutory cross-departmental strategy led by either the Royal College of Physicians or the coalition of Health Equals, rather than a Department of Health dashboard that solely demonstrates funding reallocation. The extent to which the wider determinants of health (housing, income, air quality) sit primarily outside the Office of Health Integration and Development, which was argued by the Royal College of Physicians, points to the necessity for a regional approach to funding as part of the Ten-Year Health Plan and its associated measureable and time-bound targets for narrowing the healthy life expectancy (HLE) gap (Goddard, 2021).

Secondly, storm overflow measures for Sustainable Development Goal 6 should change the headline measure for storm overflow discharges from a number of discharge events to the pollutant load of those discharges over time weighted for precipitation so that weather variability does not skew future investments in infrastructure and the inability of the State to invest in good stormwater treatment systems.

As a third item, a third party should evaluate the water company's environmental performance through WINEP on a national level, while on the local level, they could use programs such as "Wonderful Windermere". The party evaluating must have no financial relationship with the water company that is being evaluated. Water sampling techniques must be utilized today in addition to modelling that is more predictive in order to complete the independent assessment gap that Save Windermere identified and was also stated in the Environment Agency's capacity report.

Fourthly, local First-Time Connections to the sewer system for owners of septic tanks where they can connect to the city's sewer system should be fast-tracked through the establishment of minimum mandated completion deadlines, and their expenditures for fulfilling the above-stated commitments need to be reported to the public, based upon the fact that there has been underspending in the Windermere area. This approach will help to reinforce the SDG 6.b community-participation standard, as community-side coalitions will obtain enforceable legal authority, in addition to previous roles as a convening agent (jeanettekwok, 2025).

6. Conclusion

Within the UK context, there is a direct structural interdependency between SDG 3, which focuses on the health and well-being of individuals through access to a safe and healthy environment (e.g., clean air), and SDG 6, which addresses the need for access to clean and safe water resources for all. In the UK, sewage pollution and failure to achieve safe water quality have resulted in an ongoing failure to provide safe and healthy environments for SDG 3, while socioeconomic disparities in wealth and privilege create differential exposure to environmental hazards and access to health care resources. Despite a number of national initiatives, such as monitoring health inequalities through OHID, the Environment Act 2021, Storm Overflows Discharge Reduction Plan, and WINEP, considerable levels of increased transparency, data and investment have been created since 2021; however, outcome-based data reveal that pollution levels continue to remain unacceptably high and that the life-expectancy disparity has not decreased. The Windermere case study shows that without independent verification and enforceable delivery targets, multiple stakeholders at the local level can achieve little, even with well-resourced partnerships. To close the ambition/outcome gap, cross-government collaboration, outcome-based measurements, and independently verified accountability must occur at the national and local levels.

7. References

- by (2019). *SEWER CONNECTION CONTRACTORS-Connecting to City Sewer*. [online] Septic System Services. Available at: <https://groundstone.ca/2019/03/sewer-connection/>.
- Carver, D. and Bolton, P. (2025). *Q&A: Storm overflows discharge reduction plan*. [online] House of Commons Library. Available at: <https://commonslibrary.parliament.uk/research-briefings/cbp-9617/>.
- Chiu, W.-K. and Ben (2023). Sustainable Development Goal 3 in Healthcare. *Science Direct*, 11(1), pp.33–45. doi:https://doi.org/10.1007/978-981-99-1564-4_3.
- Ejiohuo, O., Onyeaka, H., Akinsemolu, A., Nwabor, O.F., Siyanbola, K.F., Tamasiga, P. and Al-Sharify, Z.T. (2024). Ensuring water purity: Mitigating environmental risks and safeguarding human health. *Water Biology and Security*, [online] 4(2), p.100341. doi:<https://doi.org/10.1016/j.watbs.2024.100341>.
- Environment Agency (2025). *Environment Agency storm overflow spill data for 2024*. [online] GOV.UK. Available at: <https://www.gov.uk/government/news/environment-agency-storm-overflow-spill-data-for-2024>.
- Federica Bedendo (2025). Government pledges to clean up Windermere in Lake District. *BBC*. [online] 10 Mar. Available at: <https://www.bbc.com/news/articles/cm2je1djrm2o>.
- Gaffield, S.J., Goo, R.L., Richards, L.A. and Jackson, R.J. (2003). Public Health Effects of Inadequately Managed Stormwater Runoff. *American Journal of Public Health*, 93(9), pp.1527–1533. doi:<https://doi.org/10.2105/ajph.93.9.1527>.
- Goddard, A. (2021). The road to the Inequalities in Health Alliance. *Future Healthcare Journal*, 8(1), pp.9–11. doi:<https://doi.org/10.7861/fhj.2021-0021>.
- GOV.UK (2021). *Public health system reforms: location of Public Health England functions from 1 October*. [online] GOV.UK. Available at: <https://www.gov.uk/government/publications/location-of-public-health-england-phe-functions-from-1-october-2021/public-health-system-reforms-location-of-public-health-england-functions-from-1-october>.
- jeanettekwok (2025). *Switching from Septic to City Sewer: What Homeowners Need to Know - ProRooter & Septic*. [online] ProRooter & Septic. Available at: <https://prorooterseptic.com/septic-to-sewer/> [Accessed 5 Jul. 2026].

- Kshatriya, M., Syal, R., Als, D., Muralidharan, O., Akindole, B., Padhani, Z.A., Das, J. and Bhutta, Z.A. (2026). Implementation of health and health-related sustainable development goals: progress, challenges and opportunities—a systematic literature review update. *BMJ Global Health*, 11(2), p.e021623. doi:<https://doi.org/10.1136/bmjgh-2025-021623>.
- Office, D.P. (2023). *Government response to the Times' Clean It Up Campaign – Defra in the media*. [online] Blog.gov.uk. Available at: <https://deframedia.blog.gov.uk/2023/02/13/government-response-to-the-times-clean-it-up-campaign/>.
- Robinson, J., Bert, Exeter, D., Zhao, J. and Gott, M. (2025). The impact of area deprivation on access to and utilization of health services in the last year of life: A retrospective population-based cohort study. *Palliative Care and Social Practice*, [online] 19(3). doi:<https://doi.org/10.1177/26323524251332302>.
- UNDP (2025). *Sustainable development goals*. [online] United Nations Development Programme. Available at: <https://www.undp.org/sustainable-development-goals>.
- United Nations (2018). *Sustainable Development Goal 6 Synthesis Report on Water and Sanitation*. [online] Available at: https://www.unwater.org/sites/default/files/app/uploads/2018/12/SDG6_SynthesisReport2018_WaterandSanitation_04122018.pdf.
- Vinter, R. (2025). *UK government vows to clean up Windermere after sewage criticism*. [online] the Guardian. Available at: <https://www.theguardian.com/environment/2025/mar/09/uk-government-vows-to-clean-up-windermere-after-sewage-criticism>.