

# Green prisons

A guide to creating environmentally  
sustainable prisons

Green prisons: A guide to creating environmentally sustainable prisons

This document is co-published by the United Nations Interregional Crime and Justice Research Institute (UNICRI) and Penal Reform International (PRI).

Its contents are the sole responsibility of the co-publishers.

### **United Nations Interregional Crime and Justice Research Institute**

UNICRI's programmes aim to promote national self-reliance and the development of institutional capabilities. To this end, UNICRI provides a one-stop facility offering high-level expertise in crime prevention and criminal justice problems. Technical co-operation is enhanced by the use of action-oriented research to assist in the formulation of improved policies and concrete intervention programmes. Institutional and on-the-job training of specialized personnel form an integral part of UNICRI activities.

[www.unicri.org](http://www.unicri.org)

### **About Penal Reform International**

Penal Reform International (PRI) is an independent non-governmental organisation that develops and promotes fair, effective and proportionate responses to criminal justice problems worldwide. We work to promote criminal justice systems that uphold human rights for all and do no harm. We run practical human rights programmes and support reforms that make criminal justice fair and effective. Our primary objectives are to secure trials that are impartial, sentencing practices that are proportionate and promote social rehabilitation, and humane conditions of detention where alternatives to imprisonment are not possible. We work through country missions, regional hubs, remote coordination, and through partners.

[www.penalreform.org](http://www.penalreform.org)

Published in March 2025.

@ United Nations Interregional Crime and Justice Research Institute and Penal Reform International 2025.

# **Green prisons:**

a guide to creating environmentally  
sustainable prisons

# Contents

Disclaimer .....	6
Acknowledgements.....	6
Foreword .....	7
<b>Executive Summary.....</b>	<b>9</b>
<b>1. Introduction .....</b>	<b>13</b>
<b>2. Methodology .....</b>	<b>15</b>
2.1 Limitations.....	15
<b>3. Prisons and sustainability in context .....</b>	<b>17</b>
3.1 The environmental impact of prisons .....	17
3.2 Environmental sustainability goals - A global overview .....	18
3.3 Exploring greener alternative measures to imprisonment .....	21
3.4 Enhancing human rights protections and social sustainability through environmental projects.....	21
3.5 Prioritising fairness and inclusivity in green initiatives .....	23
3.6 Addressing common challenges and constraints.....	27
3.7 Building the resilience of prisons through sustainability initiatives .....	29
<b>4. 'Greening' prisons - Practical ways to make prisons more sustainable .....</b>	<b>31</b>
4.1 Developing effective plans and policies for more sustainable prisons.....	31
4.2 Ensuring institutional and community support for greener prisons .....	36
4.3 Considering prisons within their local environment .....	39
4.4 Locating and designing prisons to be both green and rehabilitative.....	40
4.5 Ensuring sustainable building practices.....	44
4.6 Reducing energy consumption and using more sustainable energy sources .....	47
4.7 Greening prison transportation .....	52
4.8 Using sustainable public procurement .....	54

4.9 Food procurement and catering.....	56
4.10 Using sustainable farming practices .....	66
4.11 Water management.....	69
4.12 Other waste materials .....	71
4.13 Conservation and biodiversity projects.....	75
4.14 Community involvement and benefits.....	77
4.15 Citizen science .....	80
4.16 Awareness raising and formal training and education.....	80
4.17. Monitoring and evaluation .....	82
<b>5. Conclusion .....</b>	<b>85</b>
<b>ANNEX 1 .....</b>	<b>87</b>
<b>Road map for a more sustainable prison system.....</b>	<b>87</b>
Assessing current environmental impacts .....	88
Gaining institutional and community support.....	89
Developing realistic plans and goal setting.....	89
Consultation, communication and coordination .....	90
Prioritizing wellbeing and rehabilitation and promoting safe and healthy environments .....	90
Considering all aspects of prison planning and management .....	91

## Disclaimer

The opinions, findings, conclusions and recommendations expressed herein do not necessarily represent the views of the United Nations Interregional Crime and Justice Research Institute (UNICRI) and Penal Reform International (PRI) or any other national, regional or international entity. This publication does not constitute an endorsement by UNICRI and PRI of such opinions or conclusions. The designations employed and presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area of its authorities or concerning the delimitation of its frontiers and boundaries. Contents of this publication may be quoted or reproduced, provided that the source of information is acknowledged.

## Acknowledgements

This report was written by Sharon Critoph, Consultant at UNICRI, under the overall guidance and editing of Matthew Burnett-Stuart (Associate Expert, UNICRI), Mana Yamamoto (Research Expert, UNICRI), Olivia Rope (Executive Director, PRI), Jerome Mangelinckx (Global Policy Manager, PRI), Taghreed Jaber (Regional Director for Middle East and North Africa, PRI), and Doreen Namyalo Kyazze (Regional Director for Sub-Saharan Africa, PRI).

UNICRI and PRI acknowledge the valuable input provided by the following Expert Group meeting participants from academia, governmental and non-governmental organizations: Alex Newman, Bola Akinrolabu, Brian Steels, Camille Racette, Clémence Bouchart, Daiana Huber, Dominique Moran, Dorin Muresan, Francis Pakes, Helena Pombares, Ivan Calder, Lukáš Dirga, Luisa Ravagnani, Martin Gauthier, Nadja Radkowska, Sergio Grossi and Stephen Pitts.

## Foreword

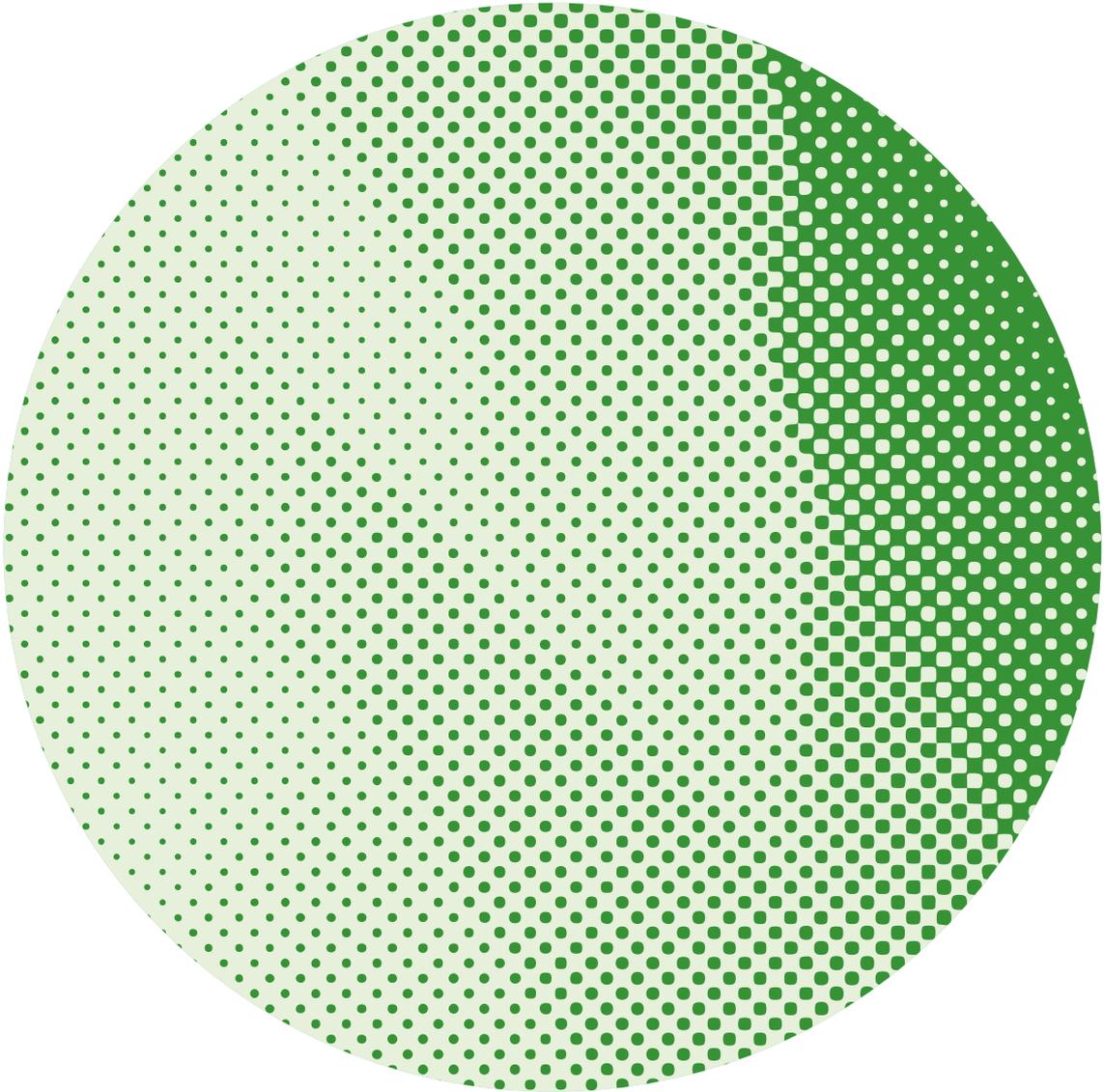
The impacts of climate change and environmental instability can intensify existing vulnerabilities in prisons, creating unique risks to the health and safety of those living and working within them. While prisons have a significant environmental footprint, they are often overlooked in broader sustainability discussions. At the same time, all stakeholders, including people detained in prison, can become agents of change, fostering more sustainable practices.

The United Nations Interregional Crime and Justice Research Institute (UNICRI) and Penal Reform International (PRI) are strongly committed to advancing policies that promote humane and environmentally responsible prison systems. This commitment aligns with several Sustainable Development Goals (SDGs), particularly SDG 16, which advocates for peaceful and inclusive societies, access to justice for all, and effective, accountable, and inclusive institutions, as well as SDG 13, which emphasises taking urgent action to combat climate change and its impacts.

This study is the result of a research initiative to examine how sustainable practices can be integrated into prison settings while supporting rehabilitation efforts. Drawing on global examples, it highlights practical and often cost-effective approaches that benefit both people in prison and the wider community. Sustainability initiatives in prisons should also be part of a broader strategy for penal reform—one that prioritises reducing the overuse of imprisonment while safeguarding the rights of people in prison.

We hope that the promising practices and recommendations presented in this report will inspire and drive reforms that support ecological sustainability, enhance prison conditions, promote effective rehabilitation, and contribute to safer and more secure communities worldwide.

**Leif Villadsen, Acting Director UNICRI and  
Olivia Rope, Executive Director, Penal Reform International**



# Executive Summary

## The Environmental Impact of Prisons

Prisons contribute significantly to environmental degradation, particularly in cases where facilities are outdated, overcrowded, and resource-intensive. Common issues include:

- **High energy consumption** due to 24-hour security operations, inefficient lighting, and poor insulation.
- **Food waste** and unsustainable catering practices.
- **High water consumption** and waste mismanagement.
- **Carbon-intensive transportation** for people in prison transfers and supply chains.
- **Environmental degradation** from unsustainable building practices and facility locations.

The most effective way to reduce prisons' environmental impact is by limiting the overuse of imprisonment through alternative measures, such as probation and community service. Sustainable prison management should prioritize reducing overcrowding while simultaneously implementing targeted green initiatives to reduce resource consumption and emissions.

## Key Strategies for Greening Prisons

This report details five key strategies that have been implemented in various countries to make prison systems more sustainable:

### 1. Policy and Institutional Commitment:

- Embedding sustainability principles into prison policies and operations.
- Establishing sustainability teams and training prison staff on environmental practices.
- Engaging external experts and stakeholders to provide technical guidance.

### 2. Sustainable Infrastructure and Energy Efficiency:

- Retrofitting prisons with energy-efficient lighting, insulation, and renewable energy sources.
- Implementing energy and water monitoring systems to track consumption.
- Ensuring sustainability is factored into new prison construction and renovation projects.

### 3. Waste Management and Circular Economy Initiatives:

- Enhancing recycling and composting programs.

- Implementing zero-waste strategies in procurement and operations.
- Encouraging repair and reuse initiatives to minimize resource consumption.

#### 4. Green Rehabilitation Programs:

- Providing imprisoned individuals with training in sustainable agriculture and eco-friendly trades.
- Incorporating green spaces into prison environments to improve well-being.
- Partnering with businesses to align rehabilitation programs with labour market needs.

#### 5. Water Conservation and Sustainable Food Systems:

- Implementing rainwater harvesting and water recycling initiatives.
- Encouraging self-sufficient prison farming to reduce reliance on external food sources.
- Reducing food waste and single-use plastics in procurement and catering.

## Challenges and Constraints

Despite the potential benefits of green prison initiatives, several challenges persist:

- **Financial and Resource Constraints:** Limited budgets may hinder sustainability investments.
- **Security and Logistical Issues:** Implementing green projects must align with prison security protocols.
- **Risk of Greenwashing:** When considering green prison projects, it is important to distinguish between those that are truly environmentally sustainable and those that may appear to be, or are labelled 'green,' but which may, in fact, be detrimental to the environment.
- **Ensure health and safety of people detained:** Mitigate risks that sustainability initiatives are pursued at the expense of the well-being of people in prison, as well as their treatment and conditions of detention.
- **Lack of Institutional Support:** Success depends on commitment from prison leadership and policymakers.
- **Limited Data on Effectiveness:** Robust monitoring and evaluation mechanisms are necessary.
- **Public Perception and Policy Barriers:** Effective communication is needed to gain support for green initiatives.

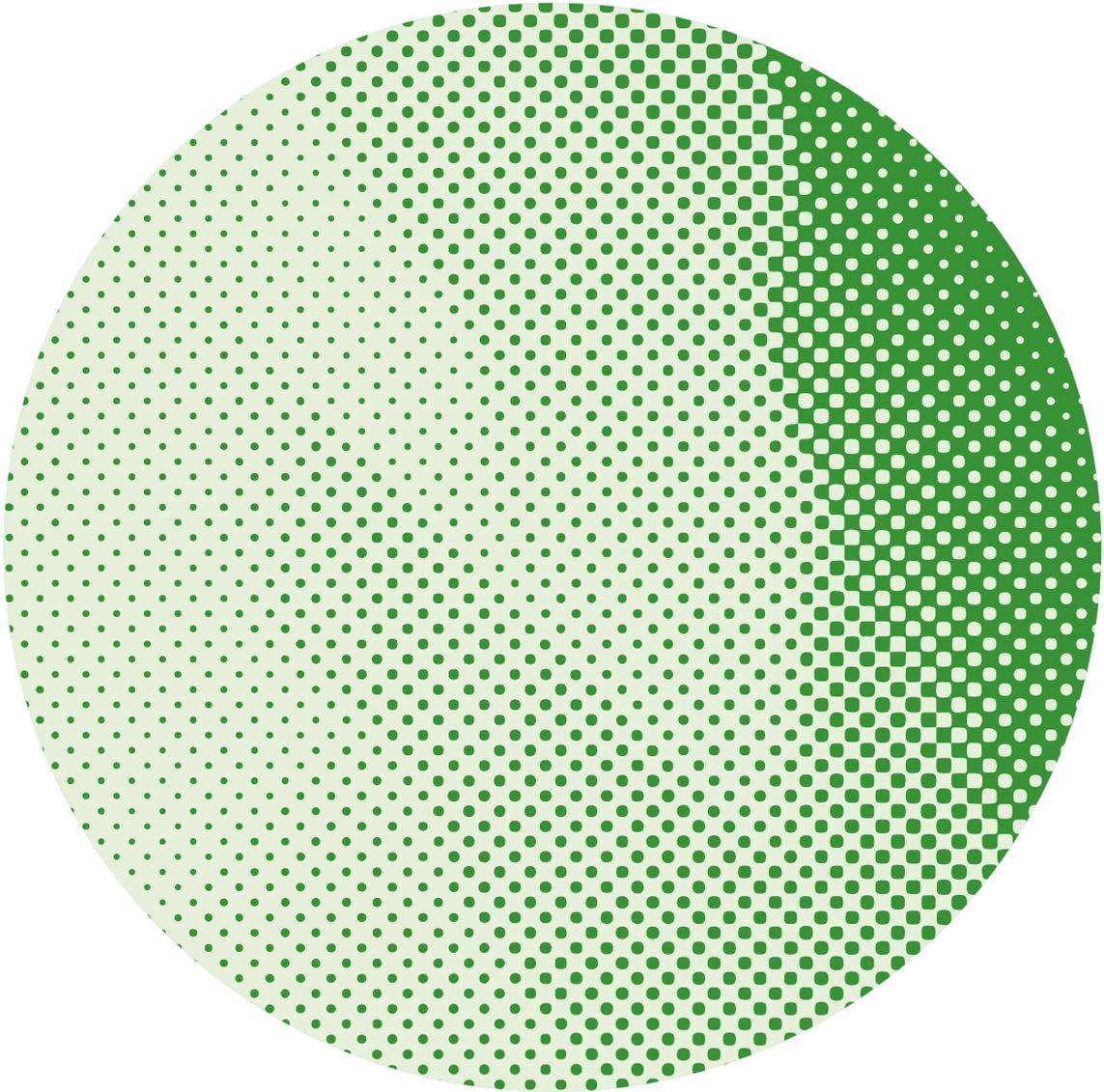
## Conclusion and Recommendations

A truly sustainable prison system goes beyond energy efficiency and waste reduction; it must be embedded in broader justice reform, prioritizing rehabilitation, human rights, and inclusivity.

Policymakers and prison authorities should:

- **Integrate sustainability principles into prison management frameworks.**
- **Ensure sustainability initiatives incorporate and uphold human rights** including by avoiding exploitative prison labor.
- **Monitor and evaluate green prison projects** to measure their impact and improve future initiatives.
- **Promote alternatives to imprisonment**, reducing prison populations and enhancing community-based measures and sanctions.
- **Encourage cross-sector collaboration**, engaging environmental agencies, civil society, and private sector partners to support sustainable prison reforms.
- **Embed sustainability into rehabilitation strategies**, ensuring that people in prison are given the tools and skills to contribute to the green economy upon their release.
- **Create financial incentives and funding mechanisms** to encourage investment in green prison programs.

By adopting these strategies, prisons can become models of environmental stewardship while fostering humane and rehabilitative conditions for those imprisoned. A shift toward sustainable prisons is not only a necessity for reducing environmental impact but also a vital component of penal reform, ensuring prison systems are human rights-based and rehabilitative.



# 1. Introduction

---

As with other large public institutions such as hospitals and schools, prisons use a lot of energy, food, water and other resources, and produce large amounts of waste. Despite their significant environmental impact and their potential contribution to environmental sustainability, prisons have been largely overlooked in this area and there are few examples of prison systems that have successfully integrated sustainability strategies into policy and practice across all areas of prison management. However, indications suggest that this is becoming a subject of significant and growing interest among prison leaders, practitioners, and civil society globally,<sup>1</sup> with numerous examples of good practices from around the world.

The capacity of prisons to contribute to environmental efforts is substantial, including through the participation of people detained in prison and via specific rehabilitation projects. Successful projects around the world range from small-scale local initiatives to major green prison construction programmes that seek to minimise the environmental impact of prisons and mobilise the potential of people detained in them to contribute to environmental protection. In some jurisdictions, prison systems have been at the forefront among public institutions and within the justice sector in advancing sustainability efforts.

This report provides examples of good practices and identifies the challenges that prison administrations may face in managing prisons in accordance with sustainability principles and environmental stewardship, giving guidance on the practical steps that they can take towards greener prisons. This report also considers the potential downsides of the green prisons industry and the threat of “greenwashing,” advocating that all sustainability initiatives should be part of broader penal reform that prioritises reducing the overuse and overreliance on imprisonment, improving conditions of detention, and enhancing rehabilitation opportunities and the protection of the rights of people in prison.

The greening of prisons provides great opportunities to incorporate design principles that support and promote the physical and mental well-being of people in prison, including the incorporation of safe and diverse green spaces. Prison sustainability projects should also go hand in hand with efforts to achieve

---

<sup>1</sup> See, for example, the International Corrections and Prisons Association's (ICPA) April 2024 Innovation in Prisons Infrastructure Conference: <https://icpa.org/events/innovative-prisons-infrastructure-conference-ipc/>, the EUROPRIS Sustainability in Prisons Workshop: <https://archive.euopris.org/events/sustainability-in-prisons-workshop-2024/> and Prison Insider, Prison Administration Responses to the Climate Crisis – A study on how prison administrations around the world account for climate change and implement the ecological transition, February 2024. [https://www.prison-insider.com/files/ec91846b/rapport\\_en\\_final.pdf](https://www.prison-insider.com/files/ec91846b/rapport_en_final.pdf)

effective rehabilitation and addressing reoffending. Green prisons are not inherently rehabilitative and there is a risk that prioritising sustainability targets – energy performance, processes, materials, and infrastructure – may undermine efforts to rehabilitate and empower people in prison, thereby limiting the effectiveness of prisons in reducing negative behaviours.

The greening of prisons should also be considered in close relation to the climate crisis and environmental justice. PRI and other international organisations<sup>2</sup> have previously identified that people in prison are among those most severely affected by climate-driven hazards and extreme weather, highlighting the critical importance of climate adaptation in future prison design and stressing that climate action must be fully integrated into prison management and reform. This integration should include provisions to ensure the protection of the most vulnerable populations against the impact of climate change.<sup>3</sup> The greening of prisons should therefore serve not only to mitigate the impacts of climate change within prison facilities through effective adaptation to future climates, but also play a role in combatting the global climate crisis. This approach will create a stronger alignment between human rights principles and environmental sustainability within the justice sector.

This report also includes a roadmap for creating a more sustainable prison system, providing a strategic framework to guide prisons in implementing practical, phased actions. These steps aim to minimise environmental impact while promoting a healthier, more rehabilitative environment for people in prison, staff, and the wider community.

---

<sup>2</sup> UNODC, Prisons and the climate crisis: more than 40 member states gather on Nelson Mandela Day 2023, 18 July 2023. [https://www.unodc.org/unodc/en/justice-and-prison-reform/cpcj-prison-reform/news/prisons-and-the-climate-crisis\\_-more-than-40-member-states-gather-on-nelson-mandela-day-2023.html](https://www.unodc.org/unodc/en/justice-and-prison-reform/cpcj-prison-reform/news/prisons-and-the-climate-crisis_-more-than-40-member-states-gather-on-nelson-mandela-day-2023.html) and Prison Insider, 'Prisons in the eye of the storm', 30 September 2024. <https://www.prison-insider.com/en/articles/prisons-dans-l-oeil-du-cyclone>

<sup>3</sup> Penal Reform International, Prisons in Crises: Natural hazards and extreme weather: <https://www.penalreform.org/global-prison-trends-2021/special-focus-2021-prisons-in-crises/natural-hazards-and-extreme-weather/>

## 2. Methodology

---

This report sets out the findings from a comprehensive desk-based study on the intersection of environmental sustainability and rehabilitation in prisons, exploring current environmental policies, assessing the ecological footprint of prisons, and identifying critical risks and challenges as well as key opportunities.

A working group consisting of 17 interdisciplinary experts was established following an open call. The experts' input was gathered through interviews, the sharing of ideas and information, and further specialist consultations. The full draft of the report was discussed during an expert online meeting in October 2024. PRI and UNICRI also consulted officials and other experts during the research. In September 2024, UNICRI attended the 'Sustainability in Prisons Workshop' in York, England, organised by the European Organisation of Prison and Correctional Services (EuroPris).<sup>4</sup>

This report is divided into two main sections. The first examines the environmental impact of prisons, contextualises environmental sustainability, reviews developments at the policy level, and addresses common challenges and pitfalls that have impacted sustainability projects to date. This section also explores the intersection between sustainability, rehabilitation, and human rights. The second section focuses on greening prisons in practice, looking at the different areas in which prison administrations can reduce their negative environmental impact and promote prison-based rehabilitation initiatives.

Good practices in sustainability initiatives are highlighted throughout this report, including those that involve people in prison and prioritise their physical and mental well-being, rehabilitation, and empowerment. Country citations are noted in bold and selected good practices are highlighted in green.

### 2.1 Limitations

Given that some sustainability projects in prisons are still relatively new, along with insufficient monitoring and evaluation of many prison programmes and the inherent challenges of assessing the effectiveness of rehabilitation initiatives, it has not been possible to determine the viability, success, or environmental

---

<sup>4</sup> Europris, Sustainability in Prisons Workshop – How to save energy, water, waste and costs (2024). <https://archive.europris.org/events/sustainability-in-prisons-workshop-2024/>

and human rights credentials of all examples presented in this publication. Furthermore, some initiatives are still in the planning stages. However, the examples are shared as good practices that can inspire other prison authorities to replicate or build upon. It will always be the case that some sustainability and rehabilitation projects in prisons will be more successful and long-lived than others, depending on many factors, including financing, institutional support, levels of overcrowding, and detention conditions. This guidance document provides a framework designed to systematically improve the likelihood of success for projects across the board.

Some of the projects featured in this report may have originated from necessity rather than a focus on sustainability - such as the need to feed prison populations during periods of food insecurity - and were not always planned or evaluated from a green perspective. Nonetheless, they have delivered environmental and rehabilitative benefits, offering valuable lessons for broader application. These examples also show that greening prisons does not have to be expensive or resource-intensive.

# 3. Prisons and sustainability in context

---

## 3.1 The environmental impact of prisons

Prisons generally have a significant environmental impact, particularly in places where facilities are old and energy inefficient, with outdated heating systems, poor insulation or ventilation, little natural light, inefficient lighting, and energy-intensive appliances. Prison facilities also tend to have high energy consumption due to their 24-hour lighting and security operations as well as the large numbers of people they house. Ventilation and heating are also more challenging in closed spaces with large numbers of occupants.

Prisons with large populations consume substantial resources and generate significant amounts of waste. Moreover, many prisons are situated in rural and isolated locations, necessitating frequent transportation for supplies and transfers. Budgetary constraints also play a significant role, with authorities in numerous facilities opting for cheaper materials for short-term savings, often at the expense of longer-term environmental sustainability.

Undoubtedly, the most effective way to limit the environmental impact of the prison system would be to reduce the number of people in prison and the number of prison facilities altogether.<sup>5</sup> Fewer prison buildings with fewer occupants would consume fewer resources, produce less waste, reduce transportation needs, and allow for more effective sustainability and rehabilitation initiatives. In overcrowded and understaffed prisons, the capacity of prison administrations to implement positive environmental changes and improve rehabilitation efforts is significantly constrained, thereby undermining the success of existing programmes.

Prison greening initiatives must form part of wider government reform of the justice sector, including allocating more funds to crime prevention and detention alternatives. Such broader reforms will reduce the potential costs of continuing to build more green prisons. They can include green projects within probation services and early release programmes including sustainability projects.

---

<sup>5</sup> Jewkes, Y. and Moran, D, 'The paradox of the 'green' prison: Sustaining the environment or sustaining the penal complex?', 30 March 2015. <https://journals.sagepub.com/doi/10.1177/1362480615576270#>

At the same time, it is crucial to enhance the sustainability of prison estates through renovations or new constructions. To achieve this, prison administrations must first assess their environmental impact to identify the necessary improvements. This requires that all national efforts to measure environmental impacts include prison systems. Once the impact is thoroughly assessed, it will be essential for authorities to establish clear targets for improvement, enabling effective monitoring of progress.

Efforts to understand the environmental impact of prisons are already underway in some locations. For example, in 2022, the Correctional Service of Canada was reported to be the third-largest greenhouse gas emitter among all federal government departments in the country,<sup>6</sup> with estimates also suggesting that a facility housing 800 people can generate as much as half a tonne of food waste per day.<sup>7</sup> In the United Kingdom of Great Britain and Northern Ireland (UK), in 2022, the Ministry of Justice (incorporating prisons, probation centres and courts) accounted for over 20% of the government's carbon emissions, water consumption and waste footprint, and 45% of paper use.<sup>8</sup> In 2016-2017, prisons were responsible for 70% of the Ministry of Justice's greenhouse gas emissions.<sup>9</sup>

## 3.2 Environmental sustainability goals - A global overview

There are many international commitments on environmental sustainability. The Paris Agreement, the 2030 Agenda for Sustainable Development, and the Sendai Framework for Disaster Risk Reduction provide the foundation for sustainable, low-carbon, and resilient development under a changing climate.<sup>10</sup> While prisons are not at the forefront of international environmental discussions, the intersection between prisons and climate change is an area of increasing interest, both in terms of their contribution to climate change and the disproportionate way in which the impacts of climate change affect prison populations.

The 17 Sustainable Development Goals (SDGs) are an urgent call for action by all countries to end poverty, protect the planet, and promote peace and prosperity, whilst tackling climate change and preserving the world's forests and oceans. These goals are at the heart of the 2030 Agenda for Sustainable Development, which puts the principles of equality and non-discrimination at its heart and commits to 'leave no-one behind' and 'reach those furthest behind first.'<sup>11</sup> They should therefore form the basis of all efforts by prison authorities to develop sustainable practices. The goals provide clear targets and indicators for authorities to follow so that prisons can play their part.

---

<sup>6</sup> Correctional Service of Canada, 2023 to 2027 Departmental Sustainable Development Strategy, [https://publications.gc.ca/collections/collection\\_2024/scc-csc/PS81-2-2023-eng.pdf](https://publications.gc.ca/collections/collection_2024/scc-csc/PS81-2-2023-eng.pdf)

<sup>7</sup> Powerknot.com, 'Stony Mountain Institution maintains safety with LFC security package', 5 April 2022. <https://powerknot.com/casestudies/stony-mountain-institution-maintains-safety-with-lfc-security-package/>

<sup>8</sup> Ministry of Justice, 'Climate Change and Sustainability' <https://www.gov.uk/guidance/ministry-of-justice-climate-change-and-sustainability>

<sup>9</sup> Ministry of Justice environment sustainability overview 2016-2017. <https://www.nao.org.uk/wp-content/uploads/2017/11/Ministry-of-Justice-environmental-sustainability-overview-2017.pdf>

<sup>10</sup> United Nations Environment Programme. <https://www.unep.org/>

<sup>11</sup> UN Department of Economic and Social Affairs, Transforming our world: The 2030 Agenda for Sustainable Development, <https://sdgs.un.org/2030agenda>

Amongst the SDG goals and targets that have the most technical relevance for the context of this report are SDG 6 on ensuring the availability and sustainable management of water and sanitation for all; SDG 7 on ensuring access to affordable, reliable, sustainable and modern energy for all; SDG 9 on building resilient infrastructure, SDG 11 on sustainable cities and communities, SDG12 on responsible consumption and production, and SDG 15 on halting biodiversity loss.

SDG 13 calls for all States to take urgent action to combat climate change and its impacts and this goal should form the basis of climate protection, resilience and adaptation planning in prisons in support of SDG 16 on justice and strong institutions.<sup>12</sup>

## Relevant SDGs



The 2015 Paris Agreement is a legally binding agreement which requires States to establish a national climate action plan (known as a Nationally Determined Contribution - NDC)) and to update it every five years. NDCs are where each country sets its own targets for mitigating greenhouse gas emissions and for adapting to climate impacts.

National Adaptation Plans (NAPs) are plans which can help translate the NDCs into action. Where relevant, prisons should be included in plans towards meeting the targets of the Paris Agreement and should be reflected in National Adaptation Plans, including all targets, actively contributing to their countries' emission reduction targets through measures such as energy efficiency, waste management, and sustainable infrastructure.

While NAPs are not intended to go into great detail about plans, integrating the justice sector and prisons more specifically into these broader plans will help to ensure they are later integrated into implementation. Very few countries have already specifically included prisons in their NAPs or other climate plans or integrated the NDCs into their prison planning. There are however some examples. An early (2005) plan for the energy sector in the Republic of **Malawi** included specific reference to using more energy-efficient stoves in prisons and other public institutions to improve air quality and reduce deforestation.<sup>13</sup> **New Zealand**'s first NAP (2022) also references prison infrastructure.<sup>14</sup> In the **UK**, the

<sup>12</sup> UNODC, 'Prisons and the climate crisis' more than 40 Member States gather on Nelson Mandela Day 2023', 18 July 2023. [https://www.unodc.org/unodc/en/justice-and-prison-reform/cpcj-prison-reform/news/prisons-and-the-climate-crisis\\_-more-than-40-member-states-gather-on-nelson-mandela-day-2023.html](https://www.unodc.org/unodc/en/justice-and-prison-reform/cpcj-prison-reform/news/prisons-and-the-climate-crisis_-more-than-40-member-states-gather-on-nelson-mandela-day-2023.html)

<sup>13</sup> Government of Malawi, final report, National Adaptation Programme of Action, Energy Sector, <https://unfccc.int/gcse?q=prison#gsc.tab=0&gsc.q=prison>

<sup>14</sup> New Zealand Government, Adapt and Thrive: Building a climate-resilient New Zealand – Aotearoa New Zealand's first National Adaptation Plan, 2022. <https://environment.govt.nz/assets/publications/climate-change/MFE-AoG-20664-GF-National-Adaptation-Plan-2022-WEB.pdf>

Ministry of Justice developed its own climate change adaptation strategy in 2024 which considers prison infrastructure, climate resilience and energy usage.<sup>15</sup>

There are also more subject-specific international agreements such as the Convention on Biological Diversity (CBD)<sup>16</sup> which includes targets on protecting oceans and lands, restoring degraded ecosystems, and reducing pollution and its impact on biodiversity. Regional environmental agreements, like the European Green Deal, legally commit the EU to achieving climate-neutrality by 2050 – an economy with net-zero greenhouse gas emissions.

### **Best Practices**

Several governments have specifically included prisons in their plans and communications under the Convention on Biological Diversity. The fifth national report on the Convention by the Government of **Mauritius** highlighted a project at the Richelieu open prison farm to conserve the genetic resources of endangered Creole cattle for breeding programmes to protect the future of the species.<sup>17</sup> The first national action plan for biodiversity of **Finland** (1997-2005) also made specific reference to prisons as having a direct impact on the conservation of biological diversity in its work to preserve established cultivated plants and Finnish breeds of domestic animals in danger of extinction.<sup>18</sup> Finland's fifth national report to the Convention noted that gene bank herds for native cattle and sheep breeds at Pelso prison farm and other locations formed the core of conservation work.<sup>19</sup>

Some country reports and communications under the United Nations Framework Convention on Climate Change (UNFCCC) also specifically make mention of prisons, including several early references. The **Republic of Suriname** noted in its first national communication (as early as 2005) that Santo Bomo prison had the only sewage treatment facility in the country at the time, with most domestic and industrial liquid waste being disposed directly into the ocean.<sup>20</sup> The **Republic of Botswana's** Technology Needs Assessment on Climate Change (2004) identified good practice examples of wastewater management already in place at Moshupa and Kanye prisons.<sup>21</sup> In its 2021 National Inventory Report to the UNFCCC

<sup>15</sup> Ministry of Justice, Climate change adaptation strategy 2024. <https://www.gov.uk/government/publications/climate-change-adaptation-strategy-moj/climate-change-adaptation-strategy-2024-moj>

<sup>16</sup> Convention on Biological Diversity: <https://www.cbd.int/>

<sup>17</sup> Ministry of Agro-Industry and Food Security, Fifth National Report on the Convention on Biological Diversity, April 2015. <https://www.cbd.int/doc/world/mu/mu-nr-05-en.pdf>

<sup>18</sup> National Action Plan for Biodiversity in Finland, 1997-2005, December 1997. <https://www.cbd.int/doc/world/fi/fi-nr-01-en.pdf>

<sup>19</sup> Finland, Fifth National Report to the Convention on Biological Diversity, <https://www.cbd.int/doc/world/fi/fi-nr-05-en.pdf>

<sup>20</sup> Republic of Suriname, first national communication under the United Nations Framework on Climate Change, 2005, <https://unfccc.int/sites/default/files/resource/Suriname%20INC.pdf>

<sup>21</sup> Botswana Technology Needs Assessment on Climate Change, Final Report 2004, [https://unfccc.int/ttclear/misc\\_/StaticFiles/gnwoerk\\_static/TNR\\_CRE/e9067c6e3b97459989b2196f12155ad5/74a6f253859c48f488b9905b6862fda2.pdf](https://unfccc.int/ttclear/misc_/StaticFiles/gnwoerk_static/TNR_CRE/e9067c6e3b97459989b2196f12155ad5/74a6f253859c48f488b9905b6862fda2.pdf)

the **Republic of Mauritius** specifically noted the success of a composting project at Petit Verger prison.<sup>22</sup> While these mentions may seem inconsequential, they are in fact crucial to ensuring that prisons are included in and remain part of the global discourse on climate change.

### 3.3 Exploring greener alternative measures to imprisonment

The move towards greener prisons should not detract from the urgency to reduce the overuse and overreliance on imprisonment globally. There are many ways in which criminal justice systems can enhance their environmental sustainability without resorting to the construction of additional prisons or the expansion of existing prison spaces. Reducing the number of people in prison will also facilitate in-prison sustainability initiatives, as green programmes and services are more easily implemented in prisons that have fewer people in prison and greater availability of staff and other resources.

#### Greener, non-custodial alternatives to imprisonment

There are many non-custodial alternatives to imprisonment at pre-trial, trial, sentencing and post-conviction stages, with opportunities to integrate environmental sustainability and citizenship into such measures. Examples include green probation and community service, where convicted individuals participate in environmental projects in the community.<sup>23</sup> Probation hostels and halfway houses can take steps to make their facilities more sustainable and involve residents in green initiatives. Temporary leave or early release programmes could also encourage participation in community-based green projects, reinforcing skills gained through in-prison programmes and fostering a commitment to long-term environmental responsibility. Each of these approaches can also serve as valuable tools in facilitating the reintegration, inclusion and rehabilitation of people in prison.

### 3.4 Enhancing human rights protections and social sustainability through environmental projects

Sustainable development is a model comprising three interlinked elements – environmental, social and economic sustainability – that meets the needs of the present without compromising the ability of future generations to meet their own needs.<sup>24</sup>

Sustainability projects should neither overshadow nor threaten fundamental human rights protections. In fact, respect for universal human rights is essential to achieving all components of sustainable development, with human rights laying the foundation for social sustainability principles. In the context of prisons, sustainability initiatives have the potential to contribute to addressing existing human rights concerns, strengthening human rights protections, advancing rehabilitative goals, and improving the working conditions of prison staff.

---

<sup>22</sup> Republic of Mauritius, National Inventory Report to the United Nations framework Convention on Climate Change, December 2021, <https://unfccc.int/sites/default/files/resource/National%20Inventory%20Report%20-%20Republic%20of%20Mauritius.pdf>

<sup>23</sup> PRI Blog, Stephen Pitts, 'Greening Justice - The Contribution of Green Probation', forthcoming, April 2025.

<sup>24</sup> Sustainable Development Commission, What is sustainable development. <https://www.sd-commission.org.uk/pages/what-is-sustainable-development.html>

Environmental sustainability initiatives in prisons are much more likely to succeed in facilities where the human rights of people in prison are respected and where the principles of social sustainability – social equity and justice, diversity and inclusion, and access to basic services and resources – are prioritised. As self-contained communities, prisons are ideally positioned to demonstrate how the various pillars of sustainability can interconnect to create economically viable systems that enhance the social, environmental, cultural, and human rights-based aspects of the community.

However, there is a genuine risk that resources allocated to sustainability projects, including green technologies, may divert funds from other programmes and services within prisons, including health care, education, and the improvement of basic living conditions. There is also a risk that sustainability initiatives may be pursued at the expense of the well-being of people in prison, as well as their treatment and conditions of detention. It is crucial to guard against these risks and focus instead on improving the situation of people in prison, while seeking funding opportunities allocated to climate change mitigation and adaptation that can also contribute to enhancing their treatment and conditions of detention.

Considerations such as physical safety and security, the promotion of both physical and mental well-being, the provision of adequate conditions of detention, the maintenance of ties with families and communities, and ensuring effective communication are all essential components of the rehabilitation process. Prison infrastructure should support the well-being, safety, dignity, and rehabilitation of people in prison, ensuring compliance with human rights standards, particularly those concerning adequate living conditions, such as ventilation, space, sanitation, and access to health care. The principle of 'do no harm,' whereby any actions taken should not cause harm to others or the environment, should also be prioritised.

People are more likely to engage positively with sustainability initiatives if their human rights are upheld. Similarly, prison staff are more likely to support these initiatives if they have favorable working terms and conditions. Guidance on international standards for the treatment of people in prison can be found in the UN Mandela Rules<sup>25</sup> and the UN Bangkok Rules.<sup>26</sup>

---

<sup>25</sup> A/RES/70/175

<sup>26</sup> A/C.3/65/L.5



### Useful documents for prison planning

While not focused on sustainability, useful guidance on technical aspects of prison planning and how to ensure prison design meets international human rights standards, including in relation to climate change include:

The International Committee for the Red Cross (ICRC), "[Towards Humane Prisons](#)" (2020)

ICRC, "[Water, Sanitation, Hygiene and Habitat in Prisons](#)" (2013).

Penal Reform International, "[Natural hazards and prisons, Protecting human rights of people in disaster prevention, response and recovery](#)" (2021).

The U.S. Department of Justice National Institute of Corrections published a U.S-focused guidance document on creating sustainable prison systems, "[Greening Corrections – Creating a Sustainable System](#)" (2011).

## 3.5 Prioritising fairness and inclusivity in green initiatives

The push towards greener prisons must be underscored by principles of fair and humane treatment and conditions of detention, non-discrimination and freedom from abuse, with particular attention paid to the rights and needs of vulnerable groups within prison populations, ensuring that no-one is disproportionately impacted by environmental reforms and that gender-specific considerations are incorporated. Specific programmes should prioritise health and well-being, rehabilitation, family and community connections, and the protection of labour rights. The UN Nelson Mandela Rules clearly state that prison labour must not be exploitative or constitute slavery, and that, where possible, people in prison should have the opportunity to choose the type of work they wish to perform, with safeguards in place around working hours, health, safety, and equitable remuneration.<sup>27</sup>

All green prison programmes, benefits and associated rehabilitation opportunities should be made available without discrimination, ensuring equitable access for different groups of people in prison, with due consideration given to security concerns. It may be necessary to make adaptations for certain groups, including women, older people and those with physical or mental health problems. A project in Gldani prison in **Georgia** focusing on sustainability and rehabilitation is available to those serving life sentences, a group often neglected in rehabilitation programmes. The project engages people in prison in growing their own food and has been found to enhance mental well-being while providing them with specific skills.<sup>28</sup> There may also be cultural considerations around sustainability and prisons. For example, a planned project in Australia required the involvement of Aboriginal and Torres Strait Islander peoples in the regeneration and sustainable production of local food, seeds, species and plants.<sup>29</sup>

<sup>27</sup> A/RES/70/175

<sup>28</sup> <https://www.ccifg.ge/news/n/news/harvest-in-the-penitentiary-of-gldani.html>

<sup>29</sup> Dr Steels, B, Creating restorative and sustainable environments within a custodial setting: Establishing a template for the future, [https://www.unafei.or.jp/publications/pdf/RS\\_No93/No93\\_VE\\_Steels2.pdf](https://www.unafei.or.jp/publications/pdf/RS_No93/No93_VE_Steels2.pdf)

The prison farm initiative created by PRI at Kassala Prison in **Republic of the Sudan** represents a significant step towards enhancing food security and upholding the right to food for people in prison, particularly during times of conflict when supply chains are disrupted. By cultivating crops and raising livestock within the prison grounds, this project not only ensures a stable food source for people in prison but also reduces dependency on external aid, fostering greater self-sufficiency. Environmentally, the initiative promotes sustainable practices by utilising prison land for agricultural purposes, contributing to greener, more eco-friendly prison environments. Beyond addressing immediate nutritional needs, the farm serves as a rehabilitation tool, equipping people in prison with valuable agricultural skills that can aid their reintegration into society after release. This holistic approach highlights the potential for creating “green prisons” that prioritise human rights, environmental stewardship, and long-term rehabilitation, aligning with broader efforts to improve living conditions and promote dignity within the prison system.



### **Best Practices**

The 2024 Strategic Guiding Framework for Greening **Kenya's** Justice System rightly pinpoints ‘Rights-Based Greening’ as an integral component of sustainability strategies, noting that this approach “represents an innovative path to confronting environmental challenges by respecting inherent rights and embracing intersectionality of the environment with human and non-human rights. Central to rights-based greening is the justice sector’s active role in upholding justice, nurturing environmental sustainability, and protecting the most vulnerable and marginalized. In seeking solutions, the justice sector should advocate and adopt environmental human rights as a foundational principle for environmental protection.”<sup>30</sup>



### **Putting human rights at the heart of environmental sustainability projects**

- ▶ Introduce programmes that help link people in prison with their families and local communities to normalise life in prison and facilitate reintegration and rehabilitation as the main purpose of imprisonment.
- ▶ Ensure that any imprisoned person involved in a sustainability work project is protected by health and safety standards and is fairly and equitably remunerated for their labour (labour rights).
- ▶ Incorporate human rights standards into any green prison design or improvement programme, including consideration for personal space, access to the outdoors, physical exercise, and human-centred visiting areas, that foster positive interactions, while integrating natural elements to enhance sustainability, dignity and well-being.

<sup>30</sup> National Council on the Administration of Justice, Strategic Guiding Framework for Greening Kenya's Justice System 2024. <https://qr.me-qr.com/mobile/pdf/ac8966de-1075-4a56-a1a2-56cae524a061>

- ▶ Design green prison spaces and green rehabilitation programmes, prioritising how spaces and design can enhance individual physical and mental well-being, including the incorporation of trauma-informed design and therapeutic spaces.
- ▶ Ensure that green design and rehabilitation programmes consider the needs of the entire prison population, including different groups within prisons, such as women, children, older people, those with physical disabilities, and neurodiverse individuals, and that these programmes and spaces are made available to all without discrimination.



### Unpacking the 'green' prison concept and preventing "greenwashing"

When considering green prison projects, it is important to distinguish between those that are truly environmentally sustainable and those that may appear to be, or are labelled 'green,' but which may, in fact, be detrimental to the environment.

For this reason, it is crucial that all claims regarding prison sustainability projects, as well as related human rights and rehabilitation claims, be carefully monitored and vetted, with outcomes closely tracked and made public. In this regard, UNICRI and PRI note that it has not been possible to assess the viability, effectiveness, or environmental and human rights credentials of the examples given in this publication due to a lack of monitoring and evaluation. However, greater certainty regarding the sustainability of similar initiatives can be achieved if they are developed in accordance with the guidance and recommendations outlined in this report.

'Green' prisons, also sometimes known as 'ecoprisons' may also have many green credentials in terms of architecture, design and core functions such as energy provision, but daily life for persons in the prison may still be harsh, human rights violations may remain rife, and rehabilitation opportunities may be insufficient. It is important to caution that a 'green' prison is not inherently a good or effective prison when it comes to promoting well-being, reducing recidivism, and ensuring public safety. Rehabilitation programmes labelled as 'green' may still fall short of human rights standards, raising serious concerns about detention conditions,<sup>31</sup> exploitative labour practices,<sup>32</sup> and inadequate safeguards for those involved. Issues such as coerced labour, unfair remuneration,<sup>33</sup> beatings, corruption, and other human rights abuses<sup>34</sup> may persist under the guise of sustainability. Furthermore, some 'green' initiatives may be linked to the production of goods in facilities associated with torture, forced labour, or the deforestation of protected forests.<sup>35</sup>

<sup>31</sup> Architizer, Holmsheidi Prison, <https://architizer.com/projects/holmsheidi-prison/>

<sup>32</sup> Jou C. Greenwashing "Modern Day Slavery" through the Mystique of Prison Farm Labor. *International Labor and Working-Class History*. Published online 2024:1-15. doi:10.1017/S0147547923000467

<sup>33</sup> The Lantern, 'The Cost of Zero-Waste: Ohio States Use of Prison Labour Sparks Scrutiny', 7 July 2020. <https://www.thelantern.com/2020/07/the-cost-of-zero-waste-ohio-states-use-of-prison-labor-sparks-scrutiny/>

<sup>34</sup> Reuters, Exclusive: Abuse and corruption exposed in Myanmar's prison labour camps, 1 September 2016. <https://www.reuters.com/article/world/exclusive-abuse-and-corruption-exposed-in-myanmar-s-prison-labor-camps-idUSKCN11758Q/>

<sup>35</sup> Demand for an independent inquiry into greenwashing by FSC in Belarus, 22 February 2024. <https://www.libereco.org/wp-content/uploads/2024/02/FSC-investigation-demand-Belarus-open-letter-English.pdf>

## Understanding what a 'green' prison means

Some prisons labelled as 'green' may in fact be harmful to the environment, particularly when it comes to large-scale farming linked to the destruction of local habitats and the introduction of heavy machinery. Monoculture farming, as practiced in some larger prison sites, can destroy ecosystems and is often linked to deforestation and soil degradation. Additionally, the pesticides and fertilisers commonly used on many farms pollute water and soil, threatening biodiversity. Where projects are intended for export, such as large-scale plantations, the eco-credentials of such initiatives are called into question due to long-distance transportation, including air freight and the use of plastic.

It is also important that prison authorities do not equate intensive farming with environmental sustainability when attempting to link rehabilitation with cost-saving or profit-making ventures. Intensive animal farming and industrial livestock production used for meat, milk, and eggs have a considerable impact on the environment, including substantial greenhouse gas emissions, and can facilitate the spread of pathogens from animals to humans. Industrial farming is, according to the United Nations Environment Programme (UNEP), 'fundamentally at odds with environmental health.'<sup>36</sup>

## Preventing "greenwashing"

There has been criticism of the potential greenwashing of prisons<sup>37</sup> – the process of making misleading or false claims about what a company or other entity is doing to protect the environment or promoting 'false solutions to the climate crisis that distract from and delay concrete and credible action.' The UN has stated that greenwashing presents a significant obstacle to tackling climate change.<sup>38</sup> Examples of greenwashing include making false claims about emissions levels, applying intentionally misleading labels and emphasising a single environmental attribute while ignoring other impacts.<sup>39</sup>

In the context of prisons, there are concerns that the green prison discourse detracts from the increasingly urgent and global imperative to reduce the use of imprisonment and its associated high costs, serving instead to legitimise mass imprisonment regardless of its huge environmental impact.<sup>40</sup> The involvement of private corporations in the construction and management of green prisons can further undermine global efforts to reduce the use of imprisonment and adds complexity to the true purpose of 'greening' prisons, as well as to the understanding of who benefits most.

<sup>36</sup> UNEP, 10 things you should know about industrial farming, 20 July 2020.

<https://www.unep.org/news-and-stories/story/10-things-you-should-know-about-industrial-farming>

<sup>37</sup> See, for example, Jewkes, Y., & Moran, D. (2015). The paradox of the 'green' prison: Sustaining the environment or sustaining the penal complex? *Theoretical Criminology*, 19(4), 451-469. <https://doi.org/10.1177/1362480615576270>

<sup>38</sup> UN Climate Action, Greenwashing – the deceptive tactics behind environmental claims, <https://www.un.org/en/climatechange/science/climate-issues/greenwashing>

<sup>39</sup> UN Climate Action, Greenwashing – the deceptive tactics behind environmental claims, <https://www.un.org/en/climatechange/science/climate-issues/greenwashing>

<sup>40</sup> Moran, D., & Jewkes, Y. (2014). 'Green' Prisons: Rethinking the 'Sustainability' of the Carceral Estate. *Geographica Helvetica*, 69, 345-353. <https://doi.org/10.5194/gh-69-345-2014>

In **England**, plans announced by the government in 2021 to create four new 'green' prisons, incorporating 10,000 new prison places were described as a 'novel spin' by one national non-governmental organisation (NGO), which pointed out that any serious plan to reduce crime and make communities safer should start with more investment in housing, employment, and health services.<sup>41</sup> Other reports have cast doubt on green prison work programmes in the **USA**, which are represented as 'wholesome and rehabilitative' while producing institutional legitimacy without significant investment in institutional reform.<sup>42</sup>

### 3.6 Addressing common challenges and constraints

The most common challenge facing prison administrations in their efforts to make prisons more environmentally sustainable relates to available financial, human, and physical resources, as well as a lack of space. Unfortunately, some sustainability projects are short-lived or fail to develop as planned due to shortages of funding and other resources. Other plans to incorporate green spaces or reduce the environmental footprint of prison buildings are easily deprioritised during implementation due to practical or security concerns.

Efforts must be made to ensure that prison systems receive the same funding and resource opportunities as other sectors when it comes to environmental initiatives. As part of this, information about sustainability funding opportunities should be proactively made available to prison administrations.

While prison administrations may wish to develop more environmentally friendly policies and practices, they are also consistently faced with many other pressing priorities, such as understaffing, overcrowding, and levels of violence, which will inevitably impact any long-term progress towards sustainability. Overcrowded facilities impede efforts to reduce waste, conserve energy and water, keep food production sustainable, and successfully roll out environmental training. Overcrowded prisons are also less likely to have available space and resources for specific environmental projects like gardening or composting or to have the staff available to manage or support green initiatives.

In Hawaii, **USA**, a study of barriers to the successful implementation of waste management in correctional facilities found that the cost of equipment or budget constraints, insufficient data, understaffing, and a lack of knowledge and experience among prison staff as well as security concerns were all barriers to implementation.<sup>43</sup>

The impact of climate change, climate-driven extreme weather events, and human activity also pose challenges for sustainability projects, with rising temperatures or extreme cold placing unprecedented pressure on prison heating and ventilation systems, while draughts and floods affect clean water supplies and the structural integrity of some buildings. In the **Republic of France**, many prisons are located far

<sup>41</sup> Euronews, 'Are 'electric prisons' the latest form of greenwashing?'; 19 May 2021.

<https://www.euronews.com/green/2021/05/19/will-the-uk-s-new-all-electric-prisons-help-or-harm-the-environment>

<sup>42</sup> Jou C. Greenwashing "Modern Day Slavery" through the Mystique of Prison Farm Labor. *International Labor and Working-Class History*. Published online 2024:1-15. doi:10.1017/S0147547923000467

<sup>43</sup> Yadao, K, Sustainable Waste Management for Hawaii's Correctional Facilities: Barriers to Implementation, 2022.

<https://scholarspace.manoa.hawaii.edu/server/api/core/bitstreams/09ac3fc6-2384-4e1f-a6fb-73bcc6258731/content>

from residential areas, often in regions exposed to pollution. It is estimated that one in ten facilities is located near industrial or agricultural sites classified as potentially hazardous, with 70% situated on soil that may be polluted, and a quarter located near airports, railways, or motorways, exposing all those living and working in prisons to air and noise pollution.<sup>44</sup>

Another challenge facing prison policymakers, prison authorities and staff seeking to implement positive environmental change within prisons is the lack of institutional support for sustainability, both within the service and from the government, as well as the potential backlash from the public. To tackle this, sustainability strategies for prisons need to be integrated into broader plans that also take into account government commitments under international agreements. Authorities must commit to ensuring that adequate human resources are in place, allowing dedicated teams or individuals to take the lead on sustainability initiatives. It is crucial that authorities recognise that environmental strategies require medium- to long-term investment and commitment. Plans must also be resilient to changes in leadership and political circumstances.

Security and operational considerations present another challenge for sustainability projects, with concerns that safety, security, and daily operations may be compromised by green initiatives. For example, concerns have been raised about the risk of contraband smuggling through schemes such as gardening, composting, and recycling, as well as the potential for materials and tools used in these programmes to be misused as weapons or for self-harm.<sup>45</sup> Some facilities may also struggle to secure sufficient staffing resources to supervise or manage the safe logistics of such programmes, particularly those involving people in prison working in off-site locations. Additionally, initiatives involving greener construction or renovations may raise security concerns, such as the risk of escape.

Another potential challenge relates to equipment and materials used in prisons, which typically must undergo a vetting process to ensure safety and security. This includes the risk of smuggling contraband, their potential use as weapons, facilitating escape, and other security considerations. Facilities seeking to transition to more locally produced equipment, materials, and even food may encounter additional procedural hurdles, as only vetted goods from pre-approved companies are permitted, which in some cases must be imported. However, with adequate security assessments and supervision tied to staffing resources, sustainability initiatives should not pose greater challenges than other rehabilitation or prison improvement programmes. Security and supervision are invariably more difficult to manage in overcrowded facilities.

While some sustainability programmes have been in existence for several years, others are relatively new, and there is a general lack of understanding or evaluation regarding their effectiveness in terms of sustainability and rehabilitation, as well as opportunities for future improvement. There is much to be learned from both long-term environmentally friendly and self-sufficiency projects and newer initiatives, and authorities should prioritise drawing insights from existing experience.

---

<sup>44</sup> RFI, 'Climate impact on French prisons leaves inmates serving 'double sentence', 13 July 2024. <https://www.rfi.fr/en/france/20240713-climate-impact-on-french-prisons-leaves-inmates-serving-double-sentence>

<sup>45</sup> See, for example, corrections1.com, 'Garden variety of contraband', 1 July 2013. <https://www.corrections1.com/contraband/articles/garden-variety-of-contraband-tNdnQUFMXNV3ZInS/>

## 3.7 Building the resilience of prisons through sustainability initiatives

Projects that promote environmental sustainability can also enhance the resilience of prison systems, particularly in areas such as food security, energy, and resource availability. Indeed, many notable sustainability initiatives, including food cultivation and production, originated out of the necessity for resilience rather than environmental considerations.

Resilience is particularly important in fragile and conflict-affected settings, areas impacted by poverty and food insecurity, and regions vulnerable to extreme weather and climate-related events. In the Republic of **Malawi** one study found that conditions of severe food insecurity were more prevalent in non-farmed prisons than in farmed ones, and that individuals in prisons in non-farmed facilities were more reliant on food provided by their families.<sup>46</sup> At Sana'a Central Prison in the Republic of **Yemen**, greenhouses have been established to supply food to people in women's prisons, many of whom are neglected by their families due to the social stigma and discrimination associated with their imprisonment. These women often face severe social exclusion, leaving them without external support or basic necessities. The greenhouses play a vital role in ensuring that women who lack family assistance have access to fresh produce, addressing food insecurity within the prison. This initiative not only improves nutrition but also fosters a sense of purpose and empowerment by involving people in prison in cultivation, helping to counter their isolation and marginalisation. By promoting sustainable practices and reinforcing the right to food, the project highlights the importance of dignity and inclusion, particularly for those on the margins of society.

The United Nations Office on Drugs and Crime (UNODC) has also emphasised that, due to climate change disruptions, supporting climate change resilience in prisons must be a priority in many of the countries in which it operates, without detracting from its efforts to limit imprisonment to a measure of last resort. UNODC aims to equip prison systems with 'concrete strategies on climate disruption preparedness and mitigation [...] in ways that enhance the prospects of 'green' prisons that make greater use of environmentally friendly and energy-efficient management practices while, at the same time, supporting the rehabilitation and social reintegration of people in prison.'<sup>47</sup>

In the Democratic Socialist Republic of **Sri Lanka**, severe weather patterns, rising temperatures, increased droughts, reduced soil fertility, and crop destruction from floods and storms have led to increased food insecurity. In response, prisons were encouraged to grow crops as part of the government's strategy to ensure consistent food supplies. This led to the establishment of 'model farms' in two prisons, which supply food for the prison system while also promoting physical and mental well-being and equipping individuals in prison with skills for the future.<sup>48</sup>

---

<sup>46</sup> The Importance of Prison Farms: Evidence from Malawi's Prisons, March 2018.

[https://www.researchgate.net/publication/324842885\\_The\\_Importance\\_of\\_Prison\\_Farms\\_Evidence\\_from\\_Malawi's\\_Prisons](https://www.researchgate.net/publication/324842885_The_Importance_of_Prison_Farms_Evidence_from_Malawi's_Prisons)

<sup>47</sup> UNODC, Climate resilience in Sri Lanka's prisons, July 2024. <https://www.unodc.org/unodc/en/frontpage/2024/July/climate-resilience-in-sri-lankas-prisons.html>

<sup>48</sup> UNODC, Climate resilience in Sri Lanka's prisons, July 2024. <https://www.unodc.org/unodc/en/frontpage/2024/July/climate-resilience-in-sri-lankas-prisons.html>

In the Republic of **South Sudan**, climate shocks, including severe flooding and prolonged dry spells, combined with regional conflicts, have led to food insecurity, with people in prison identified as being particularly vulnerable due to increased levels of overcrowding. The United Nations Mission in South Sudan (UNMISS) and the Food and Agriculture Organization (FAO) are addressing this issue through a Green Corrections Initiative, which focuses on training people in prison to cultivate prison land.<sup>49</sup>

Procuring local food may also help mitigate unexpected disruptions to supply chains caused by external events, including transportation issues and extreme weather. For example, the temporary 'Farm to Inmate' pilot program in Florida, **USA**, was an initiative born out of the COVID-19 pandemic, when supply chain disruptions made it difficult for prisons to source their produce.<sup>50</sup>

### **Best Practices**

An agricultural skills training project in the Republic of Nauru teaches individuals in prison how to produce food to improve their employment prospects upon release and aims to achieve a food self-sufficiency rate of 80%. The farm includes a piggery, a chicken farm, a compost house, a rainwater collection system, a sewage system, and a vegetable garden. The project also follows a circular economy and zero-waste approach and has been credited with improving food security in Nauru, which was disrupted during the COVID-19 pandemic as well as due to climate change.<sup>51</sup>

---

<sup>49</sup> United Nations Mission in South Sudan, Innovate 'green project' by UNMISS and FAO partner boosts food insecurity, skills among people in prison, 23 October 2023. <https://unmiss.unmissions.org/innovative-%E2%80%98green%E2%80%99-project-unmiss-and-fao-partner-boosts-food-security-skills-among-prisoners>

<sup>50</sup> University of California Nutrition Policy Institute, 'Farm to Corrections – Promising practices from across the United States,' May 2023. <https://ucanr.edu/sites/NewNutritionPolicyInstitute/files/384207.pdf>

<sup>51</sup> International Cooperation and Development Fund, H.E. Lionel Aingimea, President of the Republic of Nauru invites the Taiwan Technical Mission to establish an agricultural and livestock farm at the RON Prison to build food self-sufficiency and agri-skills for the imprisoned. <https://www.icdf.org.tw/wSite/ct?xItem=59276&ctNode=31572&mp=2>

# 4. 'Greening' prisons – Practical ways to make prisons more sustainable

---

This section considers how to green prisons in practice, looking at the different areas in which prison administrations can reduce their negative environmental impact and promote prison-based rehabilitation initiatives. Good practices, including those focused on rehabilitation, are highlighted throughout.

## 4.1 Developing effective plans and policies for more sustainable prisons



### Key findings

- ▶ Sustainability principles can be embedded into prison policies and operating procedures – this can take the form of climate action plans for relevant ministries or the prison administration itself. National climate plans can be adapted to the prison context with specific plans or targets.
- ▶ By developing their own sustainability plans, projects and targets, prison administrations can become leaders in sustainability among public bodies. In some countries, prison administrations have already made greater progress on sustainability than other justice agencies.
- ▶ Prison populations represent a significant resource in developing sustainability programmes and ensuring their successful implementation. It is crucial that prison sustainability strategies prioritise the well-being of people in prison and rehabilitation, making them key components in the development of greener prisons.

Prison systems are often excluded from national policies, with other large institutions, such as hospitals and schools, typically taking priority. It is therefore important that all official sustainability policies and guidelines apply to all government buildings, considering their environmental impact, including those managed by the prison service, such as prison headquarters, training facilities, and operational support

buildings. **New Zealand** authorities have explicitly included national and regional offices, community sites, and industries that provide rehabilitation and training opportunities in their carbon reduction plans.<sup>52</sup>

There are several positive examples of ministries and/or prison services that have embedded sustainability principles in their policies and operating procedures, or that have developed their own climate action plans or national policies that prisons must adhere to. It is important that future sustainability policies consider the well-being and rehabilitation of people in prison as key components and tools of green strategies.

### **Best Practices**

The **Irish** Government's Public Sector Climate Action Mandate requires all public sector bodies, including prisons, to reduce greenhouse gas emissions by 51% by 2030 and increase energy efficiency from the 2020 target of 33% to 50% by the same year.<sup>53</sup> One of the aims of the public sector mandate is to lead by example and inspire climate action in wider society. It includes recommendations such as establishing green teams within public sector departments, appointing climate and sustainability champions, providing staff education and training on climate issues as well as measuring, monitoring and reporting on environmental concerns. The mandate requires each public sector body to develop its own Climate Action Roadmaps.

In response, the Irish Prison Service's first Climate Action Roadmap published in 2023 sets out how the service aims to meet the targets outlined in the mandate, including plans to reduce energy and fossil fuel-related emissions from prison operations.<sup>54</sup> The prison service has stated that it is fully committed to meeting its obligations under the mandate but also acknowledges the specific challenges it faces, including the older buildings in the prison estate which were built without consideration for the environment.<sup>55</sup>

Recognising its major contribution to greenhouse gas emissions, the Correctional Service of **Canada** (CSC) first issued its Sustainable Development Strategy in 1997 and has issued eight strategy updates since then. The Department has recorded a 31.9% reduction in its greenhouse gas emissions since 2005, with a new aim to reduce emissions by half by 2030, in line with the Canadian government's overall targets on greenhouse gas emissions set out in the Greening Government Strategy. The latest 2023-

<sup>52</sup> Department of Corrections New Zealand, Annual Report 2023.

[https://www.corrections.govt.nz/\\_\\_data/assets/pdf\\_file/0007/50578/Annual\\_Report\\_2023\\_v20.pdf](https://www.corrections.govt.nz/__data/assets/pdf_file/0007/50578/Annual_Report_2023_v20.pdf)

<sup>53</sup> Government of Ireland, Public Sector Climate Action Mandate, <https://assets.gov.ie/230732/cb9efbf1-0f87-48d6-b4d7-e8f99058c1fe.pdf>

<sup>54</sup> Irish Prison Service, Climate Action Roadmap 2023, March 2023.

[https://www.irishprisons.ie/wp-content/uploads/documents\\_pdf/Climate-Action-Roadmap-2023\\_WEB.pdf](https://www.irishprisons.ie/wp-content/uploads/documents_pdf/Climate-Action-Roadmap-2023_WEB.pdf)

<sup>55</sup> Irish Prison Service, Climate Action Roadmap 2023, March 2023.

[https://www.irishprisons.ie/wp-content/uploads/documents\\_pdf/Climate-Action-Roadmap-2023\\_WEB.pdf](https://www.irishprisons.ie/wp-content/uploads/documents_pdf/Climate-Action-Roadmap-2023_WEB.pdf)

2027 CSC sustainability strategy prioritises energy saving initiatives, infrastructure renewal via energy performance contracts, clean energy technologies, waste reduction, and modernising the vehicle fleet.<sup>56</sup>

In the **USA**, the California Department of Corrections and Rehabilitation also developed its own Sustainability Roadmap which focuses on three areas – climate change adaptation, zero-emission vehicles, energy, water efficiency and conservation, and green operations.<sup>57</sup> The Roadmap includes rehabilitation and employment-building as a factor in the strategy. The Department also has its own Energy and Sustainability Section, which has clear sustainability goals and is responsible for developing, managing, and providing oversight for energy efficiency, renewable energy, and utility service conservation. In the field of energy, the department has asserted its leadership within the government at state-level, having achieved its objectives for clean on-site power generation.<sup>58</sup>

Some prison administrations have made greater progress in sustainability than other government agencies, particularly compared to other justice agencies such as courts and the police. This is partly due to the mobilisation of prison populations, who represent a significant potential resource in ensuring successful sustainability initiatives. Authorities in Kenya, for example, have noted that the **Kenya Prisons Service** has been ‘at the forefront of turning prisons and neighbouring communities into green ecosystems and reforming people in prison into climate change ambassadors’ including tree planting, water recycling, staff training, carpooling, and proper waste management.<sup>59</sup>

In **Australia**, the Department of Corrective Services of New South Wales has also developed its own environmental management plan which incorporates waste management, biodiversity conservation, sustainable energy use and the reduction of greenhouse gases, chemical management, water conservation and sustainable building and development.<sup>60</sup> A zero-waste project in the Republic of **Turkey** prisons - part of the Government’s broader Zero Waste Policy announced in 2017 – is aimed at collecting and recycling all materials used by staff and people in prison.

The Climate Change and Sustainability Strategy of the Ministry of Justice in the **United Kingdom** requires prison directors to seek opportunities to reduce energy, water, and paper use as part of broader Greening Government Commitments. Opportunities to develop green skills and pathways to green jobs in prison settings form part of this strategy through net-zero initiatives, nature conservation, sustainable construction, circular economy, and waste management projects. It also requires directors to ensure systems are in place to monitor performance, report sustainability data, and comply with official buying standards, including best practice environmental standards for the procurement of goods and services.<sup>61</sup>

---

<sup>56</sup> Correctional Service of Canada, 2023 to 2027 Departmental Sustainable Development Strategy, [https://publications.gc.ca/collections/collection\\_2024/scc-csc/PS81-2-2023-eng.pdf](https://publications.gc.ca/collections/collection_2024/scc-csc/PS81-2-2023-eng.pdf)

<sup>57</sup> California Department of Corrections and Rehabilitation, Sustainability Roadmap, <https://www.cdcr.ca.gov/green/cdcr-green/sustainability-roadmap/>

<sup>58</sup> California Department of Corrections and Rehabilitation, Energy, <https://www.cdcr.ca.gov/green/cdcr-green/energy/>

<sup>59</sup> National Council on the Administration of Justice, Strategic Guiding Framework for Greening Kenya’s Justice System 2024. <https://qr.me-qr.com/mobile/pdf/ac8966de-1075-4a56-a1a2-56cae524a061>

<sup>60</sup> NSW Department of Corrective Services, Environmental Management Plan [https://dcj.nsw.gov.au/content/dam/dcj/corrective-services-nsw/documents/Environmental\\_Management\\_Plan.pdf](https://dcj.nsw.gov.au/content/dam/dcj/corrective-services-nsw/documents/Environmental_Management_Plan.pdf)

<sup>61</sup> Ministry of Justice, Climate change and sustainability strategy, 15 March 2024. <https://www.gov.uk/government/publications/climate-change-and-sustainability-strategy-moj/climate-change-and-sustainability-strategy>

In 2019, the prison administration in **France** established an Innovation Lab for Sustainable Development and Good Practices, which works to develop climate mitigation and adaptation strategies across the prison estate. This has included the implementation of new approaches to waste management and the prevention of biodiversity loss and includes training and rehabilitation programmes for people in prison, guiding them towards in-demand and emerging green professional sectors such as the ecological management of green spaces, maintenance, and repair activities. Importantly, these programmes will be the subject of an upcoming study to assess their effects on both people in prison and staff.<sup>62</sup> The Lab also commissioned a study on how prison administrations worldwide consider climate change and implement the transition to more ecological practices,<sup>63</sup> and is currently undertaking studies on how to further integrate biodiversity in prisons as well as an evaluation of its greenhouse gas balance (BEGES) report, a decarbonisation strategy, and a prospective analysis.

There are many types of local, national or regional environment related standards that prisons might be required to adhere to in developing sustainability strategies and it is important that these are monitored and reported on. It could include, for example statutory environmental obligations, as well as waste disposal and ecological regulations. In some countries, responsibility for environmental sustainability projects is decentralised, with prison directors having discretion over budget allocation, environmental targets, waste management and other considerations.



### **Case study: A strategic framework for environmental sustainability in Kenya's justice system**

In the Republic of **Kenya** the National Council on the Administration of Justice (NCAJ) has developed a Strategic Guiding Framework for Greening Kenya's Justice System which brings together justice sector agencies and stakeholders in efforts to make the entire justice sector in the country more environmentally sustainable and ensure a coordinated approach across the justice system. The framework acknowledges that justice and sustainability are interlinked and calls on all justice system agencies to integrate green practices into their core and operational functions.

The Framework draws on Kenya's international obligations, regional commitments as well as national climate change goals and includes recommendations for different strategic areas such as physical greening, policy greening, technology adoption greening, human resource greening, and community engagement across all justice sector agencies. The strategy includes plans for greening Kenya's correctional services and is firmly linked to the rehabilitation of people in prison. Kenyan authorities have also recognised the important role of probation and aftercare services in sustainability initiatives, with the Community Order program as an alternative to prison playing a key role in environmental conservation across the country.

<sup>62</sup> UNODC, 'Prisons and the climate crisis' more than 40 Member States gather on Nelson Mandela Day 2023', 18 July 2023. [https://www.unodc.org/unodc/en/justice-and-prison-reform/cpcj-prison-reform/news/prisons-and-the-climate-crisis\\_-more-than-40-member-states-gather-on-nelson-mandela-day-2023.html](https://www.unodc.org/unodc/en/justice-and-prison-reform/cpcj-prison-reform/news/prisons-and-the-climate-crisis_-more-than-40-member-states-gather-on-nelson-mandela-day-2023.html)

<sup>63</sup> Prison Insider, Prison Administration Responses to the Climate Crisis – A study on how prison administrations around the world account for climate change and implement the ecological transition, February 2024. [https://www.prison-insider.com/files/ec91846b/rapport\\_en\\_final.pdf](https://www.prison-insider.com/files/ec91846b/rapport_en_final.pdf)

"A desirable scenario is where the offenders are not just serving time but are also being trained on green economy and sustainability. By promoting sustainable and ethical processes, products, and partnerships, these facilities can become exemplary models of eco-consciousness. This shift can also affect the broader market as the products and services emerging from these institutions begin to reflect a commitment to environmental sustainability. Adjusting offender re-entry programs to include a comprehensive understanding and skills in the green economy would support sustainability since offenders would be prepared to adequately reintegrate into society as informed citizens." Excerpt from the Strategic Guiding Framework for Greening Kenya's Justice System<sup>64</sup>



### **Developing sustainable plans and policies**

Authorities should consider some or all of the following actions to support sustainable planning and policy making:

- ▶ Justice or prison sector-specific strategies or 'roadmaps' based on national or international targets, incorporating various aspects of sustainability;
- ▶ Subject-specific policies, for example, detailed plans on developing sustainable transport systems, energy use, food waste reduction, water conservation, or waste disposal, and transitioning to automated prison files instead of paper files;
- ▶ Cooperation protocols outlining how prison authorities can coordinate and communicate with other relevant agencies on sustainability efforts;
- ▶ Embedding sustainability principles into existing policies during updates;
- ▶ Appointing an individual, team, or network with overall responsibility for sustainability planning and implementation.



### **A circular economy**

According to the European Union (EU), the circular economy is 'a model of production and consumption which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products for as long as possible.'<sup>65</sup> This model extends the life cycle of products and is intended to use more raw materials, reduce waste to a minimum, and produce less emissions. When a product is recycled, the materials can be reused productively, creating further value.

<sup>64</sup> National Council on the Administration of Justice, Strategic Guiding Framework for Greening Kenya's Justice System 2024. <https://qr.me-qr.com/mobile/pdf/ac8966de-1075-4a56-a1a2-56cae524a061>

<sup>65</sup> European Parliament, Circular economy: definition, importance and benefits, 24 May 2023. <https://www.europarl.europa.eu/topics/en/article/20151201STO05603/circular-economy-definition-importance-and-benefits>

The circular economy model is different from the linear economic model, where products are discarded at the end of their life, and where products are designed to have a limited lifespan to encourage more consumption. Increasingly, prisons around the world are using circular economy approaches to be more sustainable while also saving financial resources. Rehabilitation initiatives can often be integrated into circular economy strategies.

In the **United Kingdom**, waste management units create work for nearly 1,000 people in prison at any one time to segregate, repair, and recycle materials as part of the circular economy strategy. This work has reportedly led to nearly 4,000 tonnes of material being salvaged between 2022 and 2024. Furthermore, between 2018 and 2022, 1,791 qualifications in the waste management sector were awarded to people in prison. The Ministry of Justice has noted that the prison estate has a unique capability to repair, remanufacture, and recycle resources with plans to procure only “durable, sustainable products that are ‘made to be made again’ and can be repaired in prison workshops as many times as possible.”

## 4.2 Ensuring institutional and community support for greener prisons



### Key findings

- ▶ The success of sustainability policies and practices in prisons depends on strong institutional support at both national and local levels. This includes a commitment to providing adequate resources for sustainability initiatives and ensuring proper staff training. Projects will also greatly benefit from engagement and support within the local community.
- ▶ Identifying teams or individuals within the prison administration, particularly within specific facilities, who are responsible for sustainability efforts is essential. This could include representatives from the prison population as well as individual staff members. Projects are likely to be far more successful if prison staff are committed to achieving positive outcomes.
- ▶ Engaging with local employers is a key factor for the success of green rehabilitation projects, helping to ensure their alignment with local job market needs and facilitating future employment opportunities.

In addition to establishing policies and regulations, strong institutional and community support is needed at all levels for sustainability projects to be successful and to ensure that national-level policies are effectively translated into local action. This includes securing adequate human resources to deliver projects and ensuring staff commitment to sustainable practices. The latter involves the assignment of departments, dedicated teams, or individuals responsible for the implementation of environmental

principles. Additionally, successful strategies require support at all levels of the prison administration and broader government, including decision-makers, finance officers, and contract managers, and should be implemented in close coordination with other relevant government agencies.

Broad community support is equally essential for the success of projects, including support for new prison facilities and environmental infrastructure such as solar panels and wind turbines. This also involves securing community backing for green rehabilitation programmes, particularly when people in prison will be working in the community on specific projects. The support of potential future employers is also crucial for the success of green rehabilitation projects. In the Republic of **France**, an organic education store at Eysses prison provides training for a qualification in Multi-skilled Commercial Operations, offering practical work experience and promoting sustainable consumption. The initiative also addresses extreme poverty in prison, supports reintegration, and fosters collaboration between prison staff, various community organisations, and partner suppliers who employ the students upon release.

In the Republic of the **Philippines**, in 2016, several local authorities established a Memorandum of Agreement for a Biodiversity Conservation Program at Iwahig Prison and Penal Farm to ensure cooperation between relevant agencies with the ultimate goal of conserving, protecting, and maintaining the diversity and function of ecosystems and wildlife species at the prison farm.<sup>66</sup> The Irish Prison Service is currently establishing local 'Green Teams' in all facilities to advance the national climate action agenda at the local level.<sup>67</sup>

The strategy for Greening the Republic of **Kenya's** Justice System notes that "[...] strong institutions are a foundational basis for innovative mechanisms necessary to promote and contribute to greening and environmental sustainability." A first step for the sustainability project in Jilave Prison in **Romania** involved a formal declaration by the Prison Director affirming the environmental mission and principles, outlining that these must be respected by both staff and imprisoned individuals.<sup>68</sup>

In **Czechia**, a prison ecologist is employed at the prison, and one person at each facility is responsible for ecological matters, specifically waste and water management, air and landscape protection, and chemical waste management. This requirement is set out in a 2004 prison service internal regulation on environmental protection.<sup>69</sup>

The **UK** Ministry of Justice includes a dedicated Climate Change and Sustainability Unit, whose stated mission is to develop, implement, and integrate sustainability projects across the justice sector estate, including within prisons.<sup>70</sup> The **Northern Ireland** Prison Service has its own Sustainability Steering Group, with the Prison Service Director General serving as the Sustainability Champion for the

---

<sup>66</sup> Republic of the Philippines, Biodiversity Conservation Program for the Iwahig Prison and Penal Farm, <https://pcsd.gov.ph/biodiversity-conservation-program-for-the-iwahig-prison-and-penal-farm/>

<sup>67</sup> Irish Prison Service, Climate Action Roadmap 2023, March 2023. [https://www.irishprisons.ie/wp-content/uploads/documents\\_pdf/Climate-Action-Roadmap-2023\\_WEB.pdf](https://www.irishprisons.ie/wp-content/uploads/documents_pdf/Climate-Action-Roadmap-2023_WEB.pdf)

<sup>68</sup> ICPA – Prison Futures – Greening Prisons

<sup>69</sup> Information provided by expert group member

<sup>70</sup> See for example, Justice Jobs, MoJ Net Zero Carbon Programme Lead. <https://justicejobs.tal.net/vx/mobile-0/appcentre-1/brand-2/candidate/so/pm/1/pl/3/opp/81324-81324-MoJ-Net-Zero-Carbon-Programme-Lead/en-GB>

Department of Justice.<sup>71</sup> The **Dutch** prison service has appointed a designated Sustainability Team. In **France**, a network of ecological transformation advisors has been established in decentralised services. These advisors are trained to implement local initiatives and disseminate best practices. The network also functions as a central hub for cross-cutting issues involving multiple departments - such as real estate, budgeting, catering, and delegated management - within the central administration.



### Engaging key stakeholders in sustainability plans

Measures for engaging managers and policymakers, prison staff, imprisoned individuals, communities, future employers, and other stakeholders in green prison initiatives include:

- ▶ Developing a community or stakeholder **engagement strategy**;
- ▶ **Encouraging** and **enabling** people to contribute their thoughts and ideas through meaningful participation;
- ▶ **Conducting** early and ongoing **consultations** with all stakeholders, including through public meetings;
- ▶ **Ensuring** regular and transparent **communication** with all stakeholders to maintain accountability;
- ▶ **Using** surveys, focus groups, and workshops to **gather input** on diverse and locally relevant ideas;
- ▶ **Raising awareness** of the multiple benefits of green prisons for all;
- ▶ **Providing training** on the specifics of green programs;
- ▶ Conducting **outreach** and **media efforts**, including social media, to promote green prisons;
- ▶ **Involving** stakeholders in planning and implementation;
- ▶ Providing regular **feedback** on the progress and outcomes of different projects.

<sup>71</sup> Northern Ireland Department of Justice, Long and Muir open solar panel farm at Hydebank Prison, 3 September 2024. <https://www.justice-ni.gov.uk/news/long-and-muir-open-solar-panel-farm-hydebank-prison>

## 4.3 Considering prisons within their local environment



### Key findings

- ▶ Thorough assessments of environmental and climate hazards need to be undertaken when siting and designing new prisons, including structural resilience to extreme weather events.
- ▶ The impact of new prison buildings or expansions on local habitats, wildlife and communities must be carefully considered before building permits are granted. Authorities should actively avoid building on high-priority wildlife habitats.
- ▶ Rules and regulations around the protection of the environment should apply equally to the construction and operation of prisons and be prioritised by relevant authorities.

The choice of land for siting or expanding prisons must be carefully considered before planning and construction, and all plans should take into account factors such as assessing the risks of environmental and climate hazards. These include evaluating structural resistance for extreme weather events as well as hazards such as flooding, extreme heat, droughts, landslides, and wildfires. PRI has found that disaster prevention, response, and recovery are overlooked in prisons, despite the growing number of people housed in facilities vulnerable to extreme weather and other hazards.<sup>72</sup> The need for comprehensive risk assessments in prison planning is becoming increasingly urgent as the impacts of climate change intensify.

The local landscape and potential ecological impacts of new buildings and renovations on local habitats and wildlife must also be a key consideration in prison planning. This includes evaluating how the local environment and communities may be affected by environmental factors such as power plants or waste management. Contaminated sites, including landfills and former mines, must be avoided for new prison construction.

In some countries, new prison projects are required to produce environmental impact statements as part of the approval process, allowing for scrutiny of their impact on the local environment. In the **UK**, the prison service has expressed its commitment to enhancing the natural environment and safeguarding protected species, as required to comply with environmental legislation.<sup>73</sup> Authorities have announced plans to create wildlife habitats in the four new green prisons currently under construction, aiming to strengthen the local ecosystem.<sup>74</sup>

<sup>72</sup> Penal Reform International, Natural hazards and prisons – Protecting human rights of people in prison in disaster prevention, response and recovery, A guide to disaster risk reduction for prisons, December 2021. [https://cdn.penalreform.org/wp-content/uploads/2021/12/PRI\\_Natural\\_hazards\\_and\\_prisons\\_WEB.pdf](https://cdn.penalreform.org/wp-content/uploads/2021/12/PRI_Natural_hazards_and_prisons_WEB.pdf)

<sup>73</sup> Ministry of Justice, 'Sustainable Operations', 15 March 2019. <https://assets.publishing.service.gov.uk/media/60a385b9d3bf7f28855b8fea/sustainable-operations-pf.pdf>

<sup>74</sup> Ministry of Justice, 'New prisons go green', 14 May 2024. <https://www.gov.uk/government/news/new-prisons-go-green>

Authorities should actively avoid high-priority wildlife habitats and could instead select sites with limited ecological value to minimise the potential disruption to the local ecosystem. While some prison authorities may choose to build on ecologically significant sites and introduce biodiversity offsetting – a policy approach that claims to minimise the environmental impact of construction by compensating elsewhere – questions remain regarding the effectiveness of such strategies.<sup>75</sup>

Various national rules and regulations exist in some countries concerning environmental considerations in the construction industry. In the **UK**, some new developments were halted in 2024 due to environmental laws regulating additional runoff of nitrate and phosphates in local waterways.<sup>76</sup> Similarly, recently announced plans to build a new prison on the Swan Islands in **Honduras** have attracted criticism due to the potential impact on the island's ecosystem.<sup>77</sup>

Some projects move forward with limited oversight or environmental safeguarding measures, which can have significant impacts on the local ecosystem and communities. Authorities in the Republic of **Ecuador** have recently come under media scrutiny for constructing a large, maximum-security prison in a forest conservation area where many ancestral community organisations live and which forms part of one of the country's most endangered habitats, including bird species and vegetation unique to the region.<sup>78</sup>

## 4.4 Locating and designing prisons to be both green and rehabilitative



### Key findings

- ▶ Prison location and design are integral to the well-being of people in prison, staff, and visitors, and can play a crucial role in successful rehabilitation.
- ▶ The development of greener prisons presents an ideal opportunity to also integrate human-centred, trauma-informed design, and therapeutic landscapes to improve health and aid rehabilitation.
- ▶ Successful green well-being and rehabilitation projects require more than thoughtful design and infrastructure. They also rely on the approaches and attitudes of staff, positive community engagement, and the input of people in prison.

<sup>75</sup> New Scientist, 'Why biodiversity offsetting is a contentious issue in conservation', 13 March 2024. <https://www.newscientist.com/article/mg26134821-000-why-biodiversity-offsetting-is-a-contentious-issue-in-conservation/>

<sup>76</sup> Insidettime, 'Prison-building delayed by water-weed regulations', 25 February 2024. <https://insidettime.org/newsround/prison-building-delayed-by-water-weed-regulations/>

<sup>77</sup> Yahoo news, 'Conservationists alarmed by plan to build prison on island reserve: "This project means quite strong environmental damage"', 6 July 2024. <https://www.yahoo.com/news/conservationists-alarmed-plan-build-prison-050000613.html>

<sup>78</sup> The Guardian, 'From pristine forest to prison fortress: why Ecuador is sacrificing fragile ecosystems to build jails', 1 October 2024. <https://www.theguardian.com/global-development/2024/oct/01/ecuador-prison-construction-pristine-forest-indigenous-comuna-crime-president-daniel-noboa>

Green buildings have been defined as structures that are 'sited, designed, built, renovated and operated to energy efficient guidelines, and that they will have a positive environmental, economic and social impact over their life cycle'<sup>79</sup> The four main areas to be considered in green building design are materials, water, energy, and health.<sup>80</sup>

The concept of green prisons - where the overall prison infrastructure and operations are designed around principles of environmental sustainability - is being applied in some countries. In **England**, four new prisons are being built using recycled materials and incorporating green energy. All four are planned to be net-zero and will feature an all-electric design, reportedly preventing 280,000 tonnes of CO<sub>2</sub>, cutting energy demand by half, and saving £100 million in energy costs. All future prison designs in the country are now planned to be built to similar standards, with plans to include an orchard in every prison.<sup>81</sup> **Bulgaria** is currently developing its first two pilot green prisons and green training facilities, with plans to reform the prison environment in ways that support ecological sustainability while also enhancing rehabilitation opportunities.<sup>82</sup> **Scotland** has also announced the planned construction of its first net-zero prison, to be run on renewable energy sources such as ground source heat pumps.<sup>83</sup>

Green prisons are not a new development. In 2010, the Tihar Jail in New Delhi, **India** embarked on a project to become the world's first green prison and within a few years had already installed a bio-gas plant, a herbal garden, a water recycling unit, solar power plants, and organic compost pits, with prison craft projects also contributing to effective rehabilitation.<sup>84</sup> The prison covers over 200 hectares in the centre of New Delhi and is reported to include trees, shrubs and fruit and vegetable gardens, with authorities having introduced several animal and bird species including cows, pigeons, and geese.<sup>85</sup>

When building or adapting prisons to make them more environmentally sustainable, it is important to consider how people living and working in prisons, as well as visitors interact with and experience the local environment and how it impacts them, more specifically their physical and mental health. Prison location and design are integral to the well-being of people in prison, staff members and visitors. They are also crucial for effective rehabilitation, with studies demonstrating that locating prisons near green spaces reduces levels of self-harm, violence, and staff sickness absence.<sup>86</sup>

---

<sup>79</sup> Designing buildings, Green building, 26 April 2023. [https://www.designingbuildings.co.uk/wiki/Green\\_building](https://www.designingbuildings.co.uk/wiki/Green_building)

<sup>80</sup> Designing buildings, Green building, 26 April 2023. [https://www.designingbuildings.co.uk/wiki/Green\\_building](https://www.designingbuildings.co.uk/wiki/Green_building)

<sup>81</sup> Positive news, 'The plan to create an orchard in every prison in England and Wales', 29 April 2022. <https://www.positive.news/environment/the-plan-to-put-an-orchard-in-every-prison/>

<sup>82</sup> Bulgarian News Agency, 'Bulgaria to Build Its First "Green" Prisons', 25 January 2024. <https://www.bta.bg/en/news/bulgaria/607281-bulgaria-to-build-its-first-green-prisons>

<sup>83</sup> Transport and energy.com, 'Balfour Beatty to build Scotland's first net zero prison', 12 April 2024. <https://transportandenergy.com/2024/04/12/balfour-beatty-to-build-scotlands-first-net-zero-prison/>

<sup>84</sup> Business Standard, 'Tihar jail authorities take up slew of green initiatives', 11 January 2015, [https://www.business-standard.com/article/pti-stories/tihar-jail-authorities-take-up-slew-of-green-initiatives-11501100056\\_1.html](https://www.business-standard.com/article/pti-stories/tihar-jail-authorities-take-up-slew-of-green-initiatives-11501100056_1.html) and Hindustan Times, 'Tihar wants to be world's first green jail', 22 November 2009, <https://www.hindustantimes.com/india/tihar-wants-to-be-world-s-first-green-jail/story-SyyuQMqPHw4bMrh6JfH0AK.html>

<sup>85</sup> Dr Steels, B, Creating restorative and sustainable environments with in a custodial setting: Establishing a template for the future, [https://www.unafei.or.jp/publications/pdf/RS\\_No93/No93\\_VE\\_Steels2.pdf](https://www.unafei.or.jp/publications/pdf/RS_No93/No93_VE_Steels2.pdf)

<sup>86</sup> Moran, D, Jones, P, Jordaan, JA & Porter, A 2021, 'Does nature contact in prison improve wellbeing? Mapping land cover to identify the effect of greenspace on self-harm and violence in prisons in England and Wales', *Annals of the American Association of Geographers*, vol. 111, no. 6, pp. 1779-1795. <https://doi.org/10.1080/24694452.2020.1850232>

Greener prisons, which also incorporate human-centred, trauma-informed design and therapeutic landscapes, are known to aid rehabilitation. The potential for successful rehabilitation can be maximised by combining inspiration from nature with a coherent design philosophy, including salutogenic and biophilic design intended to promote health, happiness, and well-being.<sup>87</sup>

Research has demonstrated the potential for greener prisons to improve the well-being of people living and working in prisons, tackle stress and depression, and reduce reoffending,<sup>88</sup> including evidence that engaging with green environments can improve alertness, cognitive abilities, and social skills.<sup>89</sup> One study of prisons in **England and Wales**, which mapped green space and stretches of water in the areas surrounding prisons in relation to statistics of violence and self-harm, concluded that a 10% increase in a prisons' green space could reduce violence between people in prison, self-harm, and violence against staff. The research also considered the presence of major roads close to prisons, noting that prison location should seek to balance green space with transport links to facilitate family visits.<sup>90</sup>

Other research demonstrates that environmentally sustainable prison systems, shaped by restorative values and sustainable practices, lead to greater responsibility-taking, procedural fairness, and harm reduction, supporting the rehabilitation of people in prison while also restoring their environment and communities.

In Tasmania, **Australia**, the Southern Remand Centre was designed with the aim of providing a calm and safe environment for people living and working in prison, harnessing natural light, providing connections to the landscape, ensuring good acoustics, and using calming colours and materials in what is described as 'a dignified and people-centric approach'.<sup>91</sup>

It is important to note that successful green well-being and rehabilitation projects require more than just nurturing design and infrastructure; they also rely heavily on the approaches and attitudes of staff, positive community engagement, and the input of people in prison.

A sustainability project in Washington State, **USA**, has been designed by a local community organisation to help people in prison prepare for life after release. People in prison have planted a 'healing forest' of 36 native species, including medicinal trees, on previously barren prison land, using the Miyawaki method of planting, which involves planting diverse species closer together to improve soil microbiology. A

---

<sup>87</sup> Helena Pomares, 'How prison design can encourage rehabilitation', 28 October 2022. <https://www.pickeverard.co.uk/insights/how-prison-design-can-encourage-rehabilitation>

<sup>88</sup> See, for example, Sustainable Food Trust, 'Growing health and wellbeing in British prisons', 17 August 2020. <https://sustainablefoodtrust.org/news-views/growing-health-and-wellbeing-in-british-prisons/>

<sup>89</sup> Schmutz, U., Lennartsoon, M., Williams, S., Devereaux, M. and Davies, G. (2014). The benefits of gardening and food growing for health and wellbeing. Garden Organic and Sustain. Available online: [https://www.gardenorganic.org.uk/sites/www.gardenorganic.org.uk/files/GrowingHealth\\_BenefitsReport\\_0.pdf](https://www.gardenorganic.org.uk/sites/www.gardenorganic.org.uk/files/GrowingHealth_BenefitsReport_0.pdf)

<sup>90</sup> Moran, D, Jones, P, Jordaan, JA & Porter, A 2021, 'Does nature contact in prison improve wellbeing? Mapping land cover to identify the effect of greenspace on self-harm and violence in prisons in England and Wales', *Annals of the American Association of Geographers*, vol. 111, no. 6, pp. 1779-1795. <https://doi.org/10.1080/24694452.2020.1850232>

<sup>91</sup> X-Squared Architects, Southern Remand Centre. <https://xsa.net.au/project/southern-remand-centre-2/>

similar project in Rio de Janeiro State in **Brazil** is said to have reduced the level of violence in prisons, providing imprisoned individuals with new skills to use upon their release.<sup>92</sup>

Some countries are also shifting away from large or medium-sized prisons, by introducing, for example, small detention houses or community-based facilities, as seen in **Belgium**<sup>93</sup> and **Czechia**.<sup>94</sup> These centres focus on rehabilitation and are an integral part of the community, fostering integration and inclusion. The concept of nature-based detention houses has been described as an ecologically sustainable model for prison reform, in which small-scale detention facilities could be embedded in communities to protect, manage, and restore surrounding ecosystems. making their ecological footprint as minimal as possible and maximising their positive impact on the surrounding environment and local communities.<sup>95</sup>



### Principles of biophilic and salutogenic design in prison

These design principles acknowledge that experiences of trauma and physical and mental ill-health are high among prison populations, that traumatic experiences persist and are exacerbated during imprisonment, and that the prison environment can be the source of additional trauma.

Salutogenic and biophilic design aims to create spaces and environments that have the potential to enhance the well-being of people and help them thrive both mentally and physically.

**Biophilic design** focuses on engaging with nature to support health and well-being and includes plants, green spaces, views of nature, and access to daylight and fresh air.

**Salutogenic design** focuses on how the built environment can help improve the health and productivity of both staff and people in prison and can include the following:<sup>96</sup>

- ▶ The creation of friendly and welcoming spaces, including visitor areas.
- ▶ Creating a sense of safety and calmness by providing spaces with unobstructed sightlines, clear visibility from one space to another, and good signage.
- ▶ Designing easy-to-navigate buildings to put people more at ease, creating open and predictable spaces to increase the sense of safety, and eliminating blind spots.

<sup>92</sup> World Economic Forum, This 'healing forest' helps inmates prepare for life after prison, 15 January 2021. <https://www.weforum.org/agenda/2021/01/healing-prison-forest-planted-by-inmates/>

<sup>93</sup> ICPA, Small Scale Detention: The First Detention House in Belgium, 25 October 2023, <https://icpa.org/resource/small-scale-detention-the-first-detention-house-in-belgium.html>

<sup>94</sup> Rubikon Centrum, Detention Houses: A Way to Improve the Human Rights of Detained Persons, <https://www.rubikoncentrum.cz/en/international-systemic-projetcs/detention-houses-a-way-to-improve-the-human-rights-of-imprisoned-persons/>

<sup>95</sup> PRI blog, 24 October 2023, Nature-based detention houses, <https://www.penalreform.org/blog/nature-based-detention-houses/>

<sup>96</sup> Justice Trends, Blending trauma-informed and salutogenic principles in the design of modern correctional facilities, 28 June 2024. <https://justice-trends.press/blending-trauma-informed-and-salutogenic-principles-in-the-design-of-modern-correctional-facilities/>

- ▶ Considering personal space in living quarters and communal spaces, and creating neutral spaces within facilities that do not have a prescribed function but where people may choose to sit for comfort or reflection.
- ▶ Creating varied facilities with interconnected or separate buildings that allow people in prison to move from one space to another.
- ▶ Featuring angles and curves, calming and stress-reducing colours, soft textures, visually engaging designs, and furniture that creates a homelike environment.
- ▶ Prioritising natural light and using materials that dampen sound, and reduce exposure to harsh, unpleasant, or repetitive sounds.

## 4.5 Ensuring sustainable building practices



### Key findings

- ▶ Green practices can be prioritised at all stages of a prison's life, from construction, expansion, and renovation through to decommissioning and demolition, and by incorporating green renewable, recyclable, and local materials, green supply chains, and waste reduction during construction.
- ▶ Prison construction and renovations should be governed by environmental building standards and assessed against green criteria.
- ▶ It is important to remember that green credentials in prison buildings and operations do not necessarily imply that a prison is compliant with human rights standards. Efforts towards greener buildings should go hand in hand with commitments to enhance human rights protections.

Globally, the building and construction sector is reported to account for 30% of global energy use and 26% of energy-related emissions.<sup>97</sup> It has also been estimated that one-fifth of infrastructure and building emissions come from steel and cement production which is reported to generate up to 2.6 million tonnes of carbon dioxide every year.<sup>98</sup> However, there are many ways in which the construction sector, including those responsible for prison buildings, can make positive changes through green building practices in terms of construction, extension, renovation, and demolition. This can include using renewable and recyclable materials, developing greener supply chains, and reducing waste during construction itself. When prisons are decommissioned, it is important to consider greener demolition methods and the reuse or recycling of materials where possible.

<sup>97</sup> International Energy Agency, Buildings, <https://www.iea.org/energy-system/buildings>

<sup>98</sup> PWC, A blueprint for sourcing green building materials, 10 January 2024. <https://www.pwc.com/gx/en/issues/esg/the-energy-transition/sustainable-energy-infrastructure/blueprint-for-sourcing-green-building-materials.html#>

All new prisons and renovations should be built or developed with a view to environmental sustainability and should follow official guidance on sustainable building design where such policies exist, avoiding materials with a large carbon footprint such as concrete or steel. In some countries, however, prison design standards, security requirements, and available budget may make it difficult for prison construction to meet sustainability criteria.<sup>99</sup>

Green building materials are those made from natural, renewable sources that have been managed and harvested in a sustainable way, generating fewer emissions during their production, construction, operation, and end of life. Considerations for such materials also include whether they can be obtained locally to reduce the energy costs of transportation or if they can be salvaged from reclaimed materials at local sites. Examples of green building materials include those made from sustainably sourced, prefabricated, or recycled materials. They can include certain types of timber, bamboo, cob, recycled steel, recycled plastic, cork, clay bricks, and recycled rubber,<sup>100</sup> although the types of materials available will vary from one region to another. Increasingly, sustainable construction incorporates decarbonised pre-cast concrete as a way to reduce carbon emissions.<sup>101</sup>

Health-wise, it is also important to note that greener building materials are less toxic and can improve indoor air quality and reduce airborne health problems, and that air quality can also be improved through more effective ventilation and humidity control. These factors can also contribute to more successful rehabilitation.

### **Best Practices**

In French Guiana, a new prison complex in the Judicial City at Saint-Laurent-Du-Maroni is currently being constructed, making maximum use of local resources with a low carbon impact. The facility will use local wood for the framework and structure of some buildings. As the wood comes from native tree species, it is also naturally resistant to the local climate, termites, and fungi. The use of local materials also helps to support the local economy and preserve artisan traditions. Some of the façades and partitions in the facility are being made of compressed raw earth bricks instead of traditional bricks. These bricks sourced from local earth are reported to perform better in terms of thermal and sound insulation, making it easier to regulate humidity inside the buildings. The project also includes the incorporation of green spaces and trees between accommodation buildings. While these spaces will not be accessible to people in prison, it is envisaged that they will bring calm to the detention environment and create islands of biodiversity. From a security perspective, it is noted that the planting will also create a dense vegetative screen between buildings and help cut off cell-to-cell communications.<sup>102</sup>

<sup>99</sup> Jewkes, Y. and Moran, D, 'The paradox of the 'green' prison: Sustaining the environment or sustaining the penal complex?', 30 March 2015. <https://journals.sagepub.com/doi/10.1177/1362480615576270#>

<sup>100</sup> University College of Estate Management, 16 sustainable and cost-effective building materials, 8 May 2024. <https://www.ucem.ac.uk/whats-happening/articles/sustainable-building-materials/>

<sup>101</sup> Offsite Hub, 'Precast Concrete: Re-energising Prison Estates, 6 July 2023. <https://www.offsitehub.co.uk/precast-concrete-re-energising-prison-estates/>

<sup>102</sup> Presented at Europris Sustainability in Prisons workshop – How to save energy, water, waste and costs (2024), <https://www.europris.org/events/sustainability-in-prisons-workshop-2024/>

While there are different standards for green construction globally, the World Green Building Council's is a local, regional, and global network that works towards sustainable and decarbonised built environments, with member councils in over 70 countries worldwide. The Council's Global Policy Principles for a Sustainable Built Environment can be a useful tool for authorities when planning new prison builds, extensions, and renovations.<sup>103</sup>

Globally, there are also a number of certification systems for assessing the sustainability of buildings. They include the Building Research Establishment Environmental Assessment Method (BREEAM), which measures the environmental impact of buildings and provides guidance on ways to minimise the adverse effects of buildings on global and local environments.

While BREEAM certifies buildings around the world, BREEAM prison certification is currently limited to the UK and a few other countries. In the UK, BREEAM includes a specific sustainability assessment method adapted for the prison sector, with all new prison builds now required to achieve an 'excellent' rating and any major refurbishments required to meet the 'very good' standard.<sup>104</sup> Limerick Prison in Ireland recently achieved a 'very good' BREEAM rating.<sup>105</sup> The Ministry of Justice in England is reported to be seeking BREEAM 'outstanding' rating for its four new green prisons which are being built to higher environmental standards.<sup>106</sup>

Green building accreditation is organised in the USA through a member-based non-profit organisation, the Leadership in Energy and Environmental Design (LEED) certification, which is reported to be the world's most widely used green building rating system,<sup>107</sup> with several prisons in the USA having achieved LEED accreditation.<sup>108</sup>

Where national building regulations exist and include environmental considerations, new prison facilities are more likely to be built according to these standards. In Ireland, for example, all modern prison developments are guided by the Building Control Amendments Regulations (BCAR) which aim to ensure energy efficiency in core building element such as walls, windows, and roof structures.<sup>109</sup>

In 2019, the Tabellan 4 building in Sweden's high security Sollentuna Prison won a BREEAM award for its eco-friendly initiatives. These include a large green roof made of vegetation and turf, which protects the roof from solar radiation, rainfall, and temperature changes, facilitates the run-off of surface water, and provides pollen for insects. The facility also includes a mechanical ventilation system that heats and cools the building, and a waste disposal room where eight categories of waste can be sorted. The

---

<sup>103</sup> WorldGBC, 'Global Policy Principles for a Sustainable Built Environment', 12 April 2023.

[https://worldgbc.org/wp-content/uploads/2023/04/WorldGBC-Global-Policy-Principles\\_FINAL.pdf](https://worldgbc.org/wp-content/uploads/2023/04/WorldGBC-Global-Policy-Principles_FINAL.pdf)

<sup>104</sup> Jewkes, Y. and Moran, D, 'The paradox of the 'green' prison: Sustaining the environment or sustaining the penal complex?', 30 March 2015. <https://journals.sagepub.com/doi/10.1177/1362480615576270#>

<sup>105</sup> Irish Prison Service, Climate Action Roadmap 2023, March 2023.

[https://www.irishprisons.ie/wp-content/uploads/documents\\_pdf/Climate-Action-Roadmap-2023\\_WEB.pdf](https://www.irishprisons.ie/wp-content/uploads/documents_pdf/Climate-Action-Roadmap-2023_WEB.pdf)

<sup>106</sup> Gov.uk, 'New prisons go green', 14 May 2021. <https://www.gov.uk/government/news/new-prisons-go-green>

<sup>107</sup> USGBC, 'LEED-certified green buildings are better buildings' <https://www.usgbc.org/leed>

<sup>108</sup> See, for example, Greenviz.com, 'Nation's Greenest Prison Meets the LEED-Gold Standard' <https://www.greenbiz.com/article/nations-greenest-prison-meets-leed-gold-standard>

<sup>109</sup> Irish Prison Service, Climate Action Roadmap 2023, March 2023.

[https://www.irishprisons.ie/wp-content/uploads/documents\\_pdf/Climate-Action-Roadmap-2023\\_WEB.pdf](https://www.irishprisons.ie/wp-content/uploads/documents_pdf/Climate-Action-Roadmap-2023_WEB.pdf)

facility also prioritises reducing water consumption, using energy-efficient fridges, and installing LED lighting that can be controlled from a central surveillance centre to minimise energy usage. A mechanical ventilation system, which recycles energy in the air, has reportedly reduced heating energy consumption by up to 60%. The Tabellan 4 building was also reportedly designed to enhance the well-being of people in prison, staff, and visitors, with authorities recognising that better design leads to better concentration and reduced stress levels.<sup>110</sup>

It is important to reiterate that green accreditation for prison buildings pertains to architecture, design, and sustainable systems, and does not reflect their long-term sustainability or human rights credentials. Even prisons with the highest green accreditation have been criticised for serious human rights violations, including the use of highly restrictive measures and harsh isolation practices.<sup>111</sup>

While building a new prison from scratch allows for the construction of highly energy-efficient facilities and improves energy performance in the long run, there are also reasons why renovating and repairing older prisons may be more environmentally friendly in some instances. There are many ways in which older prisons can be adapted to make them greener, including using more sustainable materials during renovations, installing solar panels, making energy efficiency upgrades, introducing LED lighting, improving insulation, harvesting rainwater, adapting windows to allow more natural light, and introducing green spaces.

## 4.6 Reducing energy consumption and using more sustainable energy sources



### Key findings

- ▶ Incorporating renewable energy sources and energy efficiency measures not only reduces the carbon footprint of a prison facility but also helps to significantly lower running costs.
- ▶ Reducing energy usage and costs depends on having a clear initial understanding of current consumption. This can be achieved by introducing monitoring systems to track energy usage and detect potential issues in a timely manner.
- ▶ Introducing technologies to monitor energy usage must not negatively impact an individual's privacy and autonomy.

<sup>110</sup> CNN, 'Locked-up and living sustainably: Eco-friendly prison wins award', 5 April 2019. <https://edition.cnn.com/style/article/eco-friendly-prison-intl>

<sup>111</sup> Thematic report from the OPCAT unit 2020 – Isolation of inmates in remand prisons. <https://www.jo.se/app/uploads/2023/03/opcat-thematic-report-isolation-of-inmates-2020-web.pdf>

Prisons are energy-intensive facilities with hundreds, if not thousands, of residents, employees, and visitors, operating with 24/7 security and often continuous lighting, heating, or ventilation.

Energy considerations for greener buildings include the incorporation of solar design, improved insulation levels, and energy-efficient windows. Natural daylight design also reduce a building's electricity needs and has the additional reported benefits of improving people's health and productivity. Environmentally friendly buildings can also incorporate energy-efficient lighting, low-energy appliances, and renewable-energy sources.

Passive solar design refers to instances where windows, walls and floors are made to collect, store, reflect, and distribute solar energy. Passive solar design is adapted to local climates and includes window placement and design, glazing type, thermal insulation, and shading. This helps reduce the costs of heating and cooling buildings.<sup>112</sup> Passive solar design can be applied to new buildings, but existing buildings can also be adapted to incorporate such design.

Shifting towards more energy-efficient and environmentally friendly energy sources must be a priority for all prison administrations. Renewable energy sources, such as wind and solar, are also generally cheaper than coal, oil, or gas and can also generate longer-term savings. Other options also exist. In 2017, Lepoglava prison in **Croatia**, the oldest in the country, became the first to use wood chips as a renewable energy source for fuel instead of fossil fuels, thereby removing an estimated 900 tonnes of CO2 from the atmosphere.<sup>113</sup>

HMP Standford Hill in **England** installed two wind turbines on its land in 2013, with the prison benefiting directly from the energy generated, reducing both costs and the carbon footprint of the facility. The prison also allows for rent payments for the turbines based on the percentage of power sold.<sup>114</sup> Solar energy is also proving popular in prisons across the world as a source of sustainable energy. By 2020, nine prisons in Colorado, **USA**, had installed solar panels, which were predicted to save \$475,000 in energy costs over 20 years.<sup>115</sup> The State of California committed to solar projects and renewable energy in 2006 and launched 12 new solar projects in prisons in 2021. **Ireland** has also been testing solar panels at existing prisons and now has an annual programme aimed at installing solar panels across the prison estate.<sup>116</sup> A prison in **Taiwan** is also supplying energy to the island via solar panels as part of government targets to have solar power account for 73% of renewable energy capacity by 2025.<sup>117</sup> In Melfi prison in **Italy**, solar panels are predicted to provide enough energy to heat all water needed in the summer

---

<sup>112</sup> Whole Building Design Guide, Passive Solar Heating, <https://www.wbdg.org/resources/passive-solar-heating>

<sup>113</sup> Balkan Green Energy News – Lepoglava – first Croatian green prison, 7 December 2017. <https://balkangreenenergynews.com/lepoglava-first-croatian-green-prison/>

<sup>114</sup> The Guardian, 'Kent prison goes green with huge wind turbines', 15 February 2013. <https://www.theguardian.com/environment/2013/feb/15/windpower-renewableenergy#>

<sup>115</sup> Energydigital.com, 'State Prisons Harness the Power of Solar Energy', 17 May 2020. <https://energydigital.com/renewable-energy/state-prisons-harness-power-solar-energy>

<sup>116</sup> Irish Prison Service, Climate Action Roadmap 2023, March 2023. [https://www.irishprisons.ie/wp-content/uploads/documents\\_pdf/Climate-Action-Roadmap-2023\\_WEB.pdf](https://www.irishprisons.ie/wp-content/uploads/documents_pdf/Climate-Action-Roadmap-2023_WEB.pdf)

<sup>117</sup> Reuters, 'Jailhouse shock – Taiwan prison aims to jump-start island's solar power dream', 8 March 2017. <https://www.reuters.com/article/world/jailhouse-shock-taiwan-prison-aims-to-jump-start-island-s-solar-power-dream-idUSKBN16F2WA/>

months and 60% of hot water for the rest of the year.<sup>118</sup> Moreover, a photovoltaic plant, with an estimated energy output of about 140,000 kWh, will be constructed by March 2025.<sup>119</sup>

Some prisons have also taken steps to use more energy-efficient lighting to reduce their carbon footprint, or limit the amount of time that lighting and heating are in use. In Colorado, **USA**, many prisons have now replaced old light bulbs with energy-efficient bulbs that also have motion sensors for office use.<sup>120</sup> In **Ireland**, an LED light replacement programme has reduced power usage resulting in annual cost savings of around £265,000 and a 50% reduction in the power consumption of the lights.<sup>121</sup> In England, people in prison in HMP Garth made eco-friendly lights in-house, both cutting energy use and saving taxpayer money. The LED lights they made use 62% less electricity and are expected to save £2.5 million a year when rolled out across the whole prison estate.<sup>122</sup>

To successfully reduce energy consumption in prisons it is important to understand existing energy use. Even where immediate investments in greener energy supplies are not possible, introducing systems to effectively monitor energy use can detect problems and save both energy and financial resources.



### Best Practices

The **Northern Ireland** Prison Service was the first government department in the country to introduce an energy monitoring and targeting system. This low-cost and low-resource system, using meters, provides real-time data on energy and water use and includes an automated text alert to notify authorities when overuse is detected, such as when a tap has been left running or there is a water leak, allowing authorities to take action without delay. The Prison Service has also found this service useful for validating energy and water bills understanding energy and water use patterns. A similar system is being used in **Croatia** across different government departments.<sup>123</sup>

Technologies used in so-called 'smart' prisons around the world, such as those in **South Korea**<sup>124</sup> and **Singapore**<sup>125</sup> are also being used to inform authorities of factors within buildings such as temperature,

<sup>118</sup> Alessandro Pastina, 'Water saving application in Prison System', 25 September 2024. EuroPris 'Sustainability in Prisons' Workshop.

<sup>119</sup> Alessandro Pastina. Interview. 09 December 2024.

<sup>120</sup> Energydigital.com, 'State Prisons Harness the Power of Solar Energy', 17 May 2020.  
<https://energydigital.com/renewable-energy/state-prisons-harness-power-solar-energy>

<sup>121</sup> Irish Prison Service, Climate Action Roadmap 2023, March 2023.  
[https://www.irishprisons.ie/wp-content/uploads/documents\\_pdf/Climate-Action-Roadmap-2023\\_WEB.pdf](https://www.irishprisons.ie/wp-content/uploads/documents_pdf/Climate-Action-Roadmap-2023_WEB.pdf)

<sup>122</sup> Gov.uk, Prisoners building LED lights in green prisons push, 24 August 2021.  
<https://www.gov.uk/government/news/prisoners-building-led-lights-in-green-prisons-push>

<sup>123</sup> Presented at Europris Sustainability in Prisons workshop – How to save energy, water, waste and costs (2024),  
<https://www.europris.org/events/sustainability-in-prisons-workshop-2024/>

<sup>124</sup> Tephra, Technologies reshaping prison systems worldwide, 30 October 2023.  
<https://www.tephra.co.uk/blogs/technologies-reshaping-prison-systems-worldwide/>

<sup>125</sup> Opengovasia, 'Tech to make Singapore prisons smart', 12 January 2019,  
<https://opengovasia.com/2019/01/12/tech-in-singapores-prisons/>

air quality, water and energy usage, so that real-time adjustments can be made, resulting in energy savings.<sup>126</sup> However, there are concerns that the integration of technology for monitoring sustainability could also lead to increased surveillance and control over people in prison, negatively impacting their privacy and autonomy, and thereby affecting rehabilitation.<sup>127</sup>

In terms of security systems there are also considerations around introducing more eco-friendly security systems including more energy-efficient security cameras which can be operated on renewable energy, or which are connected to energy-efficient lighting systems.

## The use of biogas

Biogas has been used in some prisons, particularly in developing countries, for decades. One biogas facility in Foça, **Turkey**, is reported to be saving 1,5 million Turkish Lira in energy costs annually. In Kampala, Uganda, prisons used water hyacinth mixed with cow dung to generate biogas as fuel for cooking during frequent power cuts. In 1997, this was reported to have saved around 300m<sup>3</sup> of firewood or 8 hectares of woodland.<sup>128</sup> The generation of biogas fuel for cooking during frequent power outages was implemented as a temporary measure in Ugandan prisons. However, it is currently considered unreliable due to the increasing number of facilities (rising from 46 in 1997 to 264 facilities in 2024). While the use of biogas helps save firewood, Ugandan prisons remain focused on assessing its long-term impact on food production.

Biodigester sanitation systems have also been implemented in prisons in several developing countries for many years. These systems effectively treat human excreta and kitchen waste, improving sanitation and generating a renewable fuel source and nutrient-rich fertiliser, which also helps to reduce running costs. The system works by breaking down waste and producing gas to be used for energy while the slurry can be converted into compost.

Alongside local organisations, the International Committee of the Red Cross (ICRC) has replaced old septic tanks and supported the development of biogas sanitation systems in **Rwanda, Nepal**, and the **Philippines** for many years, with the first biogas digester installed in Rwanda in 2001.<sup>129</sup> An evaluation of these projects found that people in prison perceived the system positively due to reduced smoke from firewood, improved sanitation, health and hygiene, faster cooking times, and assurances of a guaranteed supply of fuel. From another environmental perspective, the systems saved a substantial amount of firewood, leading to reduced deforestation in the surrounding areas.<sup>130</sup> Cost savings included reduced

---

<sup>126</sup> See, for example, Building, How digital twins are cutting carbon emissions for the Ministry of Justice, 19 March 2024.

<https://www.building.co.uk/focus/how-digital-twins-are-cutting-carbon-emissions-for-the-ministry-of-justice/5128265.article>

<sup>127</sup> Imandeka, Ejo, Putra, Panca Oktavia Hadi, Hidayanto, Achmad Nizar, Mahmud, Mufti, Exploring the World of Smart Prisons: Barriers, Trends, and Sustainable Solutions, Human Behavior and Emerging Technologies, 2024, 6158154, 21 pages, 2024.

<https://doi.org/10.1155/2024/6158154>

<sup>128</sup> FIRRI Technical Document, May 2002. Economic Losses/Gains Attributed to the Water Hyacinth.

<https://core.ac.uk/download/pdf/33720783.pdf>

<sup>129</sup> Kigali Institute of Science, Technology and Management (KIST), Rwanda 2005. [https://sswm.info/sites/default/files/reference\\_attachments/ASHDEN%202005%20Biogas%20plants%20providing%20sanitation%20and%20cooking%20fuel%20in%20Rwanda.pdf](https://sswm.info/sites/default/files/reference_attachments/ASHDEN%202005%20Biogas%20plants%20providing%20sanitation%20and%20cooking%20fuel%20in%20Rwanda.pdf)

<sup>130</sup> Gauthier, M, Oppliger, A, Lohri, C and Zurbrugg C, 'Ensuring Appropriateness of Biogas Sanitation Systems for Prisons – Analysis from Rwanda, Nepal and the Philippines. <https://www.build-a-biogas-plant.com/PDF/biogas-article-sustainable-development-icrc.pdf>

expenditure on firewood, lower fees for emptying septic tanks and reduced costs due to improved hygiene. The organic waste produced by biodigesters can also generate revenue by being sold to local farmers, as is the case in some Nepalese jails.<sup>131</sup> A similar project in Tsiafahy High Security Prison in **Madagascar** replaced the use of 1 tonne of firewood every day.<sup>132</sup>



### Best Practices

A 2023 Energy Policy Review by the International Energy Agency noted that consultation and education were needed to overcome cultural sensitivities about using waste for cooking purposes.<sup>133</sup> Similar concerns have also been raised in **Rwanda, Nepal**, and the **Philippines**, but perceptions are reported to have changed after the positive impacts of the biodigesters became clear, with 98% of interviewees in Nepalese prisons and 100% of interviewees in Rwanda reporting that living conditions had improved since the installation of the system.<sup>134</sup> As an incentive, Uganda does not impose a tax on biodigesters.<sup>135</sup>

## Reducing deforestation

There has been growing attention on the connection between the use of firewood in prisons and deforestation. In **Uganda**, it is estimated that prisons consume 8,000 tonnes of wood fuel annually, with 90% of prisons entirely dependent on firewood for food preparation. In 2023, the Commissioner General of Prisons noted that prisons played a significant role in the country's deforestation, with an estimated 9,000 trees destroyed daily for meal preparation. The Commissioner called on authorities to expedite the installation of energy saving stoves.<sup>136</sup> A project promoting the use of such stoves forms part of a Memorandum of Understanding (MoU) between the Ugandan Prisons Service and the Electricity Regulatory Authority signed in 2022.<sup>137</sup> While efforts to transition to more sustainable alternatives, such as energy-saving stoves, are underway, progress remains hindered by high costs, substandard

<sup>131</sup> International Water Management Institute, 'Biogas from fecal sludge and kitchen waste at prisons' [https://www.iwmi.cgiar.org/Publications/Books/PDF/resource\\_recovery\\_from\\_waste-93-102.pdf](https://www.iwmi.cgiar.org/Publications/Books/PDF/resource_recovery_from_waste-93-102.pdf)

<sup>132</sup> ICRC, 'Prisons running on biogas', 6 February 2017. <https://www.icrc.org/en/document/madagascar-prisons-running-biogas>

<sup>133</sup> IEA, Uganda 2023 Energy Policy Review, <https://memd.go.ug/wp-content/uploads/2020/07/Uganda2023-Energy-Policy-Review.pdf>

<sup>134</sup> Gauthier, M, Oppliger, A, Lohri, C and Zurbrugg C, 'Ensuring Appropriateness of Biogas Sanitation Systems for Prisons – Analysis from Rwanda, Nepal and the Philippines.' <https://www.build-a-biogas-plant.com/PDF/biogas-article-sustainable-development-icrc.pdf>

<sup>135</sup> IEA, Uganda 2023 Energy Policy Review, <https://memd.go.ug/wp-content/uploads/2020/07/Uganda2023-Energy-Policy-Review.pdf>

<sup>136</sup> Newvision.co.ug, 'Prisons depleting forests to feed prisoners', 28 September 2023. [https://www.newvision.co.ug/category/agriculture/prisons-depleting-forests-to-feed-prisoners-NV\\_171302](https://www.newvision.co.ug/category/agriculture/prisons-depleting-forests-to-feed-prisoners-NV_171302)

<sup>137</sup> IEA, Uganda 2023 Energy Policy Review, <https://memd.go.ug/wp-content/uploads/2020/07/Uganda2023-Energy-Policy-Review.pdf>

installations, and quality issues with suppliers.<sup>138</sup> In **Malawi**, biodigesters in several prisons have been hailed as effective examples of projects which can help protect Malawi's forests from being cut down for firewood, a crucial step, given that Malawi has one of the highest deforestation rates in Sub-Saharan Africa. At one prison authorities have reported a \$400 monthly saving on firewood and electricity since the installation of the biodigester.<sup>139</sup>

## 4.7 Greening prison transportation



### Key findings

- ▶ Reducing unnecessary car journeys and using more energy-efficient vehicles can save valuable resources, while also reducing a prisons' carbon footprint, but any changes to people in prison transport must prioritise human rights protections and should not result in fewer in-person court hearings, essential medical appointments, or other external visits.

Prison systems are responsible for transporting large numbers of people daily to and from courts, hospitals, other prisons, and workplaces, with efforts underway in some countries to minimise emissions from prison transport - either by limiting the number of unnecessary journeys undertaken or by introducing more energy-efficient vehicles. This not only reduces the carbon footprint of prison services but can also lead to significant financial savings in the long term. In 2020, the **Northern Ireland** Prison Service reported that it had reduced its vehicle maintenance costs by 50% by replacing much of its vehicle fleet with more environmentally friendly vehicles.<sup>140</sup> The **Canadian** Correctional Service has 2,250 vehicles in its fleet, representing the third-largest fleet portfolio across all federal government departments. Authorities have committed to ensuring that 50% of vehicles will be zero-emission or hybrids by 2027.<sup>141</sup>

Streamlining judicial processes and adopting virtual court hearings can significantly reduce the environmental impact of the justice system by minimising the need for people in prison transportation. Conducting court sessions within prisons or via online platforms not only reduces vehicle emissions, fuel consumption, and pollution but also enhances security, reduces logistical expenses, and facilitates swifter access to justice thus improving overall prison management. **Jordan** has implemented in-prison courts to expedite legal processes, enhance security, reduce costs, and lower environmental impact by minimising transportation and associated emissions, supporting wider sustainability efforts in the justice system.

<sup>138</sup> Mudoola, P. (2023). Prisons depleting forests to feed prisoners. New Vision. 28 September 2023. [https://www.newvision.co.ug/category/agriculture/prisons-depleting-forests-to-feed-prisoners-NV\\_171302](https://www.newvision.co.ug/category/agriculture/prisons-depleting-forests-to-feed-prisoners-NV_171302)

<sup>139</sup> BBC, 'How human waste can protect Malawi's forests', 22 April 2021. <https://www.bbc.com/future/article/20210420-the-underappreciated-power-of-human-poo>

<sup>140</sup> NI Department of Justice, 'Prison Service cut transport costs with new economy vehicle fleet', 13 October 2020. <https://www.justice-ni.gov.uk/news/prison-service-cut-transport-costs-new-economy-vehicle-fleet>

<sup>141</sup> Correctional Service Canada, '2023 to 2027 Departmental Sustainable Development Strategy' <https://www.canada.ca/content/dam/csc-scc/documents/corporate/library/strategies-plans/sustainable-development-strategy/csc-2023-2027-dsds-final-en-27-oct-2023.pdf>

## Best Practices

The Irish Prison Service has a fleet of 272 vehicles which are reported to cover 3.3 million kilometres per year. Authorities have committed to electrifying the national fleet by 2030, including the purchase of new electric vehicles from 2023. Due to shortages in the electric vehicle charging infrastructure across the country, prison authorities are also looking to help expand the electric charging network.<sup>142</sup>

In **England** and **Wales** more than 200 electric vehicle charging points are being installed across 40 prisons. French authorities have implemented several initiatives to make the prison service more environmentally friendly. This includes actions set out in the **French** 2021 Covid-19 recovery plan, which included funding for replacing car fleets with electric and hybrid vehicles for the police, customs, and prison administrations.<sup>143</sup>

Consideration should also be given to reducing unnecessary travel across prison services, particularly business travel for managers and staff. Alternatives such as video-conferencing can replace in-person meetings where possible. Less-carbon intensive travel should also be considered for such journeys, such as using bus and train networks and encouraging car sharing where travel is essential. However, human rights protections during transportation must remain a priority, as this is a time of heightened risk of abuse. Some countries, including **Finland**, already use the rail network for prison transport. In other countries, there are significant human rights concerns associated with transporting people in prison by train.<sup>144</sup> The prison service **England** and **Wales** has identified that pooling vehicle resources 'helps to reduce idle time, the most wasteful element of fleet costs.'<sup>145</sup>

When planning new prison facilities, it is important for authorities to consider transport links to reduce the number of car journeys needed for prison transport, as well as for staff, visitors, and service providers. With many prison facilities located in rural areas, transport by car is often the only option, and it is important to balance access to green spaces with ease of transportation and visiting. Sollentuna prison in **Sweden** is located near the prosecutors' office and the courthouse, which means that people can be transported safely without cars via an underground connecting corridor.<sup>146</sup> The new prison in Saint-Laurent-du-Maroni, in **French Guiana**, is also situated in the same compound as the courthouse, minimising prison transportation. In other countries, NGOs and other community-based organisations sometimes help with transport for families to facilitate visits, which reduces the number of car journeys.

<sup>142</sup> Irish Prison Service, 'Climate Action Roadmap 2023'

[https://www.irishprisons.ie/wp-content/uploads/documents\\_pdf/Climate-Action-Roadmap-2023\\_WEB.pdf](https://www.irishprisons.ie/wp-content/uploads/documents_pdf/Climate-Action-Roadmap-2023_WEB.pdf)

<sup>143</sup> Stockholm Environment Institute, 'Green Public Procurement: A key to decarbonizing construction and road transport in the EU', February 2023. <https://www.sei.org/wp-content/uploads/2023/02/green-public-procurement-eu.pdf>

<sup>144</sup> PRI blog, Prisoner transportation in Russia: travelling into the unknown, 28 November 2017.

<https://www.penalreform.org/blog/prisoner-transportation-in-russia-travelling-into-the-unknown/>

<sup>145</sup> HM Prison Service, Transport Manual, 18 April

[https://assets.publishing.service.gov.uk/media/5fa57fe0e90e07041dd0fc23/PSO\\_5400\\_transport\\_manual.pdf](https://assets.publishing.service.gov.uk/media/5fa57fe0e90e07041dd0fc23/PSO_5400_transport_manual.pdf)

<sup>146</sup> CNN, 'Locked-up and living sustainably: Eco-friendly prison wins award', 5 April 2019.

<https://edition.cnn.com/style/article/eco-friendly-prison-intl>

## 4.8 Using sustainable public procurement



### Key findings

- ▶ Procurement represents a significant proportion of the environmental impact of prison systems, and it would be beneficial to introduce sustainable procurement guidelines to inform decision-making.
- ▶ There are also simple and cost-effective ways to improve the sustainability of procurement, including sourcing more locally grown and produced goods to reduce transportation and support the local community.

Public procurement refers to goods and services bought by the government with public money and represents a significant cost. In many developing countries, public procurement accounts for up to 30% of spending, and in the **Organisation for Economic Cooperation and Development** (OECD) countries it accounts for an average of 12% of public spending.<sup>147</sup> Target 12.7 of the SDGs aims to ‘Promote public procurement practice that are sustainable, in accordance with national policies and procedures.’<sup>148</sup> However, in most countries sustainable procurement remains voluntary for most types of products and services.<sup>149</sup>

The public sector has a responsibility to promote green public procurement which is ‘recognised internationally as an effective means for public administrations to manage the balance between cost effectiveness and sustainable development,’<sup>150</sup> meaning it must represent value for money in both the short and long term but with minimal harmful effects on the environment.

The **European Union** (EU) has developed specific green public procurement (GPP) voluntary criteria<sup>151</sup> designed to make it easier for public authorities, including prisons, to purchase goods, services and works with reduced environmental impacts. These criteria are designed to be easily be integrated into any tender documents and include standards for procuring many types of items, including electronic equipment, energy, food, furniture, and cleaning products.<sup>152</sup>

<sup>147</sup> UNEP, Sustainable Public Procurement.

<https://www.unep.org/explore-topics/resource-efficiency/what-we-do/sustainable-public-procurement>

<sup>148</sup> UNEP, SDG – 12.7 target and indicator on Sustainable Public Procurement implementation.

<https://www.unep.org/explore-topics/resource-efficiency/what-we-do/sustainable-public-procurement/sdg-127-target-and>

<sup>149</sup> UNEP, ‘2020/2021 Data collection for SDG Indicator 12.7.1. <https://wedocs.unep.org/bitstream/handle/20.50011822/37967/SDG.pdf>

<sup>150</sup> Irish Prisons, Climate Action Roadmap 2023.

[https://www.irishprisons.ie/wp-content/uploads/documents\\_pdf/Climate-Action-Roadmap-2023\\_2nd-Edition.pdf](https://www.irishprisons.ie/wp-content/uploads/documents_pdf/Climate-Action-Roadmap-2023_2nd-Edition.pdf)

<sup>151</sup> EU, Green Public Procurement [https://green-business.ec.europa.eu/green-public-procurement\\_en](https://green-business.ec.europa.eu/green-public-procurement_en)

<sup>152</sup> EU, Green Public Procurement [https://green-business.ec.europa.eu/green-public-procurement\\_en](https://green-business.ec.europa.eu/green-public-procurement_en)

For prisons, procurement represents a significant proportion of their environmental impact, and these considerations cannot be ignored. In the **UK**, the Ministry of Justice has noted that a significant portion of the prison department's environmental impact arises from the goods and services it purchases. As a result, it has requested prison directors to consider factors such as energy and water efficiency, as well as embedded carbon, when procuring goods.<sup>153</sup>

It is important that the prison sector be taken into consideration when developing sustainable procurement strategies and that relevant ministries or prison authorities take steps to follow these guidelines in their procurement practices. There are already some good examples of this in practice. For example, the Government Buying Standards in the **UK** cover sustainable procurement across different areas for the public sector, including the purchase of all items for use in prisons. The **Irish** Prison Service has also expressed its commitment to implementing the Irish Government's own Green Procurement Policy, which incorporates green procurement training into learning and development strategies for prison staff. The service is also looking into developing processes to gather and record data on GPP implementation within prisons.<sup>154</sup>



### Best Practices

The Scottish Prison Service's five-year Procurement Strategy includes measures to be taken to make progress towards net-zero. This strategy explores ways to reduce consumption, minimise waste, and promote awareness of the circular economy among staff through sustainable procurement toolkits produced by the Scottish Government. These resources help public sector organisations identify and address how they can optimise the economic, social, and environmental outcomes of their procurement activity.<sup>155</sup>

The **Canadian** government aims for its procurement of goods and services to reach net-zero emissions by 2050, and these targets are embedded in the Correctional Service of Canada's Sustainable Development Strategy. This includes measures to ensure that all staff in charge of procurement are trained in green procurement, while also aiming to motivate suppliers to reduce the environmental impact of the goods and services they deliver, along with their supply chains.<sup>156</sup>

Even where prison administrations do not have specific green procurement policies in place, there are simple and cost-effective ways to improve the sustainability of procurement practices. These include

<sup>153</sup> Ministry of Justice, Sustainable Operations, 15 March 2019.

<https://assets.publishing.service.gov.uk/media/60a385b9d3bf7f28855b8fea/sustainable-operations-pf.pdf>

<sup>154</sup> Irish Prisons, Climate Action Roadmap 2023.

[https://www.irishprisons.ie/wp-content/uploads/documents\\_pdf/Climate-Action-Roadmap-2023\\_2nd-Edition.pdf](https://www.irishprisons.ie/wp-content/uploads/documents_pdf/Climate-Action-Roadmap-2023_2nd-Edition.pdf)

<sup>155</sup> Scottish Government Sustainable Procurement Tools, <https://sustainableprocurementtools.scot/>

<sup>156</sup> Correctional Service of Canada, 2023 to 2027 Departmental Sustainable Development Strategy, [https://publications.gc.ca/collections/collection\\_2024/scc-csc/PS81-2-2023-eng.pdf](https://publications.gc.ca/collections/collection_2024/scc-csc/PS81-2-2023-eng.pdf)

sourcing local goods to reduce transportation and support the local community, growing and making produce on-site, choosing recycled and other sustainable materials, and minimising packaging.

## 4.9 Food procurement and catering



### Key findings

- ▶ There is great potential for prison authorities to save resources and reduce their carbon footprint when it comes to food procurement, preparation, and waste reduction.
- ▶ A positive way to achieve this is to buy locally, or to grow or produce food on-site, which also allows supporting the prison or local economy. Better quality food can also reduce violence and improve physical and mental health outcomes, as these practices are often closely linked to positive rehabilitation initiatives.
- ▶ It is crucial that any prison work associated with food production for the prison or other sustainability initiatives be rehabilitative in nature, aiming to equip people with marketable skills upon release.

Public sector institutions, including prisons, represent a substantial proportion of food procurement in all national economies, recalling that food procurement, catering, and consumption have significant environmental impacts. These impacts can relate to supply chains, production, land and water use, packaging, transportation, storage, and energy and water use in catering services.

Certain food categories have specific and additional environmental impacts, including the use of pesticides and chemical fertilisers, soil degradation, methane and nitrate emissions, and the depletion of fish stocks.<sup>157</sup> The EU's green public procurement approach to food, which extends to prisons, includes recommendations on the use of organic products, sourcing more environmentally responsible marine and aquaculture food, offering a greater selection of plant-based menus, opting for more environmentally responsible vegetable fats, and reducing energy and water consumption in kitchens. It also emphasises minimising food waste and improving waste disposal.<sup>158</sup>

<sup>157</sup> EU green public procurement criteria for food, catering services and vending machines, 27 September 2019.

<sup>158</sup> EU Green Public Criteria and Requirements, [https://green-business.ec.europa.eu/green-public-procurement/gpp-criteria-and-requirements\\_en](https://green-business.ec.europa.eu/green-public-procurement/gpp-criteria-and-requirements_en)

## Best Practices

In 2020, the **Dutch** Custodial Institution Agency (DJI) launched a procurement process to contract food services for all its prisons. All tenderers were asked to provide information on how their services would contribute to achieving the objectives of the Paris Climate Agreement and minimise environmental impact. All those submitting a tender proposal were asked to explain, among other things, how food waste would be prevented, how CO2 emissions would be minimised from source to plate, and how animal proteins would be reduced while plant proteins were increased. Each successful tenderer is expected to report on the percentage of seasonal and organic products supplied.<sup>159</sup>

In the **USA**, the Good Food Purchasing Program is a procurement model that aims to transform the way public institutions purchase food, taking into account environmental sustainability.<sup>160</sup> This model is currently being applied in at least 45 correctional facilities across the country.<sup>161</sup> New York City's strategy for good food purchasing establishes a baseline for tracking implementation of this scheme and includes plans to improve carbon accounting, pesticide-free procurement, and better leverage existing sustainable food programmes in the city.<sup>162</sup> The State of Maine's Department of Corrections has been described as one of the most progressive in the USA when it comes to food, with its five adult correctional facilities growing their own food, baking their own bread, and buying locally produced grain and other items.<sup>163</sup>

In 2017, a law in **Portugal** required all public canteens, including prison canteens, to offer at least one meal free of all animal products, while also adding a clause that these could be discontinued if there was not enough demand.<sup>164</sup> Advocates have noted that the inclusion of this option would have a significant positive impact on public health, animal welfare, and the environment.<sup>165</sup> In April 2024, **New York City** was awarded a grant to provide plant-based culinary training to food service workers at Rikers Island and two juvenile justice centres, with the aim of supporting health and wellbeing and reducing food-related greenhouse gas emissions.<sup>166</sup>

<sup>159</sup> European Commission, 'Reducing food waste by improving quality in prisons – Case study of the Dutch Custodial Institution Agency' [https://green-business.ec.europa.eu/green-public-procurement/good-practice-library/reducing-food-waste-improving-quality-prisons\\_en](https://green-business.ec.europa.eu/green-public-procurement/good-practice-library/reducing-food-waste-improving-quality-prisons_en)

<sup>160</sup> Good Food Cities, Good Food Purchasing Program, <https://goodfoodcities.org/about/>

<sup>161</sup> Good Food Cities, Good Food Purchasing Program, <https://goodfoodcities.org/about/>

<sup>162</sup> NYC Good Food Purchasing, 'Citywide Goals and Strategy for the Implementation of Good Food Purchasing', September 2021. <https://www.nyc.gov/assets/foodpolicy/downloads/pdf/GFP-Citywide-Goals-Strategy.pdf>

<sup>163</sup> Corrections1.com, 'Maine prisons' food program on track to become national model', 20 February 2023. <https://www.corrections1.com/facility-design-and-operation/articles/maine-prisons-food-program-on-track-to-become-national-model-kiGjrOpdAGaqQxbG/>

<sup>164</sup> European Commission, JRC Technical Reports, 'EU GPP criteria for food, catering services and vending machines', 2019. <https://circabc.europa.eu/ui/group/44278090-3fae-4515-bcc2-44fd57c1d0d1/library/4cd0bac4-dff5-46b5-bfcd-8f69dc9cf63a/details>

<sup>165</sup> Medium.com, 'Laws in Portugal Mandate Vegan Options in All Public Institutions Including Schools, Universities, Hospitals and Prisons', 7 June 2024. <https://medium.com/@hrnews1/laws-in-portugal-mandate-vegan-options-in-all-public-institutions-including-schools-universities-b488b521ab16>

<sup>166</sup> Nyc.gov press release, 'New York City awarded \$100,000 grant to provide plant-based culinary training to workers at Rikers and juvenile justice centers', 22 April 2024. <https://www.nyc.gov/site/doc/media/culinary-training.page>

While prison authorities may have concerns that sustainable food procurement policies could incur additional costs, the positive impact of buying locally sourced sustainable produce may easily outweigh them. In addition, the potential impact that better quality food can have on reducing violence and other disciplinary incidents, and improving physical and mental health outcomes can reduce operating costs in the long term.<sup>167</sup> Procurement policies can also have a positive impact on healthier and more sustainable eating habits among people in prison.<sup>168</sup>

In the **UK**, authorities have established Government Buying Standards for Food and Catering Services (GBSF). The GBSF are mandatory for the prison and probation service and set out minimum best practice procurement standards in several areas, including environmental sustainability. Critics have pointed out that while these standards are welcome, compliance is neither monitored nor enforced, meaning there is little incentive for institutions to comply and scant evidence of their value or effectiveness.<sup>169</sup>

Non-governmental schemes can also prove to be effective in setting standards and monitoring tools. The Food for Life Scheme organised by the Soil Association across the UK tested an expansion pilot in 2022 in the City of Glasgow, **Scotland**, to expand their school meal scheme into other public sector settings, including prisons, with a view to bringing fresh and locally sourced sustainable meals into these institutions. Other voluntary sector food standards include those related to seasonality, organic food and fair-traded products, and can also prove useful to prisons as a guide. However, in the UK it has been noted that prisons currently use these standards only to a very limited extent.<sup>170</sup>

Local food procurement can bring significant benefits to local economies, reduce the greenhouse gas emissions of prison systems, and generally incur lower costs and use less packaging. Sustainable public food procurement schemes can involve public agencies such as prisons buying their food directly from local farmers, producers, and suppliers. This model makes good sense, particularly where prison facilities are located in rural, agricultural, or livestock farming areas, minimising transportation costs and time from harvest to sale. Access to fresh, local produce also has clear benefits the health and well-being of people in prison and staff members, with the potential to reduce healthcare costs.

---

<sup>167</sup> BBC Science Focus, 'How small changes to prison food drastically cut inmate violence', 16 April 2022.

<https://www.sciencefocus.com/the-human-body/prison-food-nutrition-violence-mental-health>

<sup>168</sup> Food Systems and Policy Research Group, 'What would a transformational approach to Food Public Procurement look like?'

<https://ukfoodsystems.ukri.org/research-projects-training-reports/what-would-a-transformational-approach-to-food-public-procurement-look-like/>

<sup>169</sup> Independent Review into Public Sector Food Procurement, May 2024.

<https://www.sustainweb.org/assets/independent-review-into-public-sector-food-procurement-may24-1717154707.pdf>

<sup>170</sup> Foodmatters, 'Prison Food Procurement: Benefitting Prisoners and the Public Purse', March 2024.

<https://www.foodmatters.org/blog/prison-food-procurement/#:~:text=DEFRA%20data%20also%20shows%20the,standards%20covering%20these%20and%20other>

## Best Practices

In **Brazil**, the government's Food Purchase Program requires federal agencies, including the prison service, to buy at least 30% of food from family farmers, with an emphasis on expanding production from minority groups and a minimum participation of 50% women. This programme has multiple advantages including reducing food and nutritional insecurity by strengthening family farming and the local community.<sup>171</sup>

The Prison Service in **England** and **Wales** spends around £15 million each year on prison food. Government guidelines require that 25% of this food be grown in the UK, with current estimates showing that around 50% of food procured for public prisons is grown in the UK.<sup>172</sup>

The Montana Women's Prison in the **USA** has prioritised sourcing local food since 2007, with local foods making up 30% of all food purchases, including local beans, bread, cereals, eggs, meat, and milk.<sup>173</sup> The State of Maine also has legislation in place that requires all state institutions to purchase at least 35% of their food from local suppliers by 2037.<sup>174</sup> The Maine Department of Corrections has also negotiated affordable prices for items that grocery chains do not want and that might otherwise go to waste due to their imperfect appearance.<sup>175</sup>

The sheer number of people in prison worldwide means that initiatives to use locally-grown produce are likely to have a significant positive impact on food systems and local economies, providing local supplies with a consistent market and fresh, more nutritious food to prisons. In California, **USA**, the California Department of Corrections and Rehabilitation is the State's biggest purchaser of food, spending more than \$163 million in food each year. The Farm to Corrections project in the State aims to serve seasonal, locally grown produce to people in prison, with plans to roll out the programme to all 33 adult facilities in the State eventually.<sup>176</sup> Californian law now requires that at least 60% of food purchased by state-run institutions be grown or produced within the State but this is not currently tracked or reported.<sup>177</sup>

<sup>171</sup> Mercopress, 'Brazil's Food Purchase Program re-launched', 23 March 2023. <https://en.mercopress.com/2023/03/23/brazil-s-food-purchase-program-re-launched>

<sup>172</sup> Food Matters, 'Prison Food Procurement: Benefitting Prisoners and the Public Purse', March 2024. <https://www.foodmatters.org/blog/prison-food-procurement/>

<sup>173</sup> Smartcitiesdive.com, 'Six U.S. Correctional Facilities With 'Farm to Prison' Local Food Sourcing Programs', <https://www.smartcitiesdive.com/ex/sustainablecitiescollective/six-us-correctional-facilities-farm-prison-local-food-sourcing-programs/1033746/>

<sup>174</sup> Maine Organic Farmers and Gardeners, 'Serving Time and Good Food at Mountain View Correctional Facility', 28 February 2023. <https://www.mofga.org/stories/community/mountain-view-correctional-facility/>

<sup>175</sup> Maine Organic Farmers and Gardeners, 'Serving Time and Good Food at Mountain View Correctional Facility', 28 February 2023. <https://www.mofga.org/stories/community/mountain-view-correctional-facility/>

<sup>176</sup> UC Division of Agriculture and Natural Resources, "'Farm to corrections' project provides fresh produce to people in prison, boosts California growers", 28 September 2023. <https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=57989>

<sup>177</sup> University of California Nutrition Policy Institute, 'Farm to Corrections – Opportunities and challenges in integrating California-grown produce into the State prison system', May 2023. <https://ucanr.edu/sites/NewNutritionPolicyInstitute/files/384206.pdf>

## Food growing, manufacture and self-sufficient food systems

Prisons in many countries grow and make their own food. In some cases, individual facilities or whole prison systems are fully self-sufficient in their food requirements. These practices are often firmly linked to successful rehabilitation initiatives.



### Best Practices

**South Africa's** prison population is reported to be increasingly self-sustained in terms of food provision. With 22 prison farms across the country, the Department of Correctional Service's farming provision includes meat, dairy, eggs, fruit, and vegetable production, with some farms having their own fully registered abattoirs. South African prison farms are subject to the same inspection methods as commercial farms in the country,<sup>178</sup> and the Correctional Service is reported to save the equivalent of \$9million a year as a result of people in prison producing their own food.<sup>179</sup>

Prison systems in other countries have the potential for increased self-sufficiency. For example, **Zimbabwe's** Prison and Correctional Services has 24 farms and a skilled workforce among imprisoned individuals, but many of these farms are reported to have been underutilised due to a lack of equipment and other resources.<sup>180</sup> Reports indicate that the Zimbabwean prison farms used to be much more productive than they currently are,<sup>181</sup> though efforts are underway to address this issue. The Hurungwe Prison Farm, for example, is now producing large amounts of crops that can be used within prisons or sold to buy other food items.<sup>182</sup>

Prisons in **Malawi** have also been working to boost crop production to improve nutrition in and promote sustainable agriculture in line with the United Nations Sustainable Development Goals.<sup>183</sup> In **Jamaica**, efforts have been ongoing since 2020 to move closer to prisons being more self-sufficient in food production.<sup>184</sup> By 2023, the Department of Correctional Services was reported to be self-sufficient in

<sup>178</sup> National Council of SPCAs, Prison Farms. <https://nspca.co.za/farm-animal-protection/prison-farms/>

<sup>179</sup> Times live, 'Correctional service to save R163m as prisoners produce their own food, says Lamola, 19 May 2022. <https://www.timeslive.co.za/politics/2022-05-19-correctional-services-to-save-r163m-as-prisoners-produce-their-own-food-says-lamola/>

<sup>180</sup> Chronicle, 'Why prisons should be self-sustainable', 19 September 2019. <https://www.chronicle.co.zw/why-prisons-should-be-self-sustainable/>

<sup>181</sup> The Herald, 'Stitch in time that could save prisons', 19 March 2015. <https://www.herald.co.zw/stitch-in-time-that-could-save-prisons/>

<sup>182</sup> Zimbabwe Prisons and Correctional Service, 'Hurungwe Tour', 27 May 2024. <http://www.zpcs.gov.zw/hurungwe-tour/>

<sup>183</sup> UNODC, 'UNODC support to Malawian prison farms pays off', <https://www.unodc.org/southernafrica/en/un-supports-prison-farm.html>

<sup>184</sup> Loop, '"Inmates to grow what they eat", Prisons move towards self-sufficiency', 7 June 2020. <https://jamaica.loopnews.com/content/inmates-grow-what-they-eat-prisons-move-towards-self-sufficiency>

several agricultural products, having saved over \$100 million on food purchases.<sup>185</sup> The **Guyana** Prison Service reportedly saved \$26.8 million during 2023 through meat and crop production.<sup>186</sup>

The prison system in **England** and **Wales** was previously self-sufficient in food produced on prison farms, including milk, pork, bacon, and eggs. These farms also provided training in butchery skills, food production, packing, processing, and distribution, and were making significant profits. However, these farms were closed down because it was believed that purchasing food from commercial suppliers would be more cost-effective.<sup>187</sup> In recognition of the training, health, and environmental benefits of prison food production, efforts are currently underway to return to greater self-sufficiency prison food production with the reintroduction of farming and an increased emphasis on internally manufactured food products, such as pie and pasta making.<sup>188</sup>

There are also many examples of individual facilities growing and making their own food and providing produce to other prisons or the local community. In Bastøy Prison in **Norway**, projects include organic farming, fishing, and animal husbandry. In Luzira Prison in **Uganda**, farming produce is used to feed the prison population with any excess being sold to generate income for the prison. In **Italy**, more than 2,500 people in prison are employed in activities related to agriculture, livestock, shepherding, forestry, agricultural mechanics, and gardening.<sup>189</sup>

Fish farming programmes have brought opportunities for rehabilitation and food production within prison. In **Papua New Guinea**, the Fish for Prisons programme involves people in prison building and managing fishponds, with the fish providing food for the prison population.<sup>190</sup> Several prisons in **India** also implemented on-site fish farming activities.<sup>191</sup> Some programmes also involve manufacturing food

---

<sup>185</sup> Loop, 'DCS saves more than \$100 million on food purchases,' 24 March 2023.

<https://jamaica.loopnews.com/content/dcs-saves-more-100-million-food-purchases>

<sup>186</sup> Kaietournewsonline, 'Prison Service saves \$26.8M this year through meat, crop production venture,' 31 December 2023.

<https://www.kaietournewsonline.com/2023/12/31/prison-service-saves-26-8m-this-year-through-meat-crop-production-venture/>

<sup>187</sup> Food Matters, 'Food Matters in Prisons,' January 2024.

<https://www.foodmatters.org/wp-content/uploads/2024/01/Food-Matters-in-Prisons-FINAL-version-January-24.pdf>

<sup>188</sup> Food Matters, 'Food Matters in Prisons,' January 2024.

<https://www.foodmatters.org/wp-content/uploads/2024/01/Food-Matters-in-Prisons-FINAL-version-January-24.pdf>

<sup>189</sup> Ecofarms4prisons, 'Italy, the Systematic Review about Prison Farm Activities,' 14 June 2024.

<https://www.ecofarms4prisons.eu/italy-the-systematic-review-about-prison-farming-activities/>

<sup>190</sup> Sammut, J. et al. (2024). Towards Food, Nutrition and Income Security in Papua New Guinea Through Inland Fish Farming. In: Dansie, A., Alleway, H.K., Böer, B. (eds) The Water, Energy, and Food Security Nexus in Asia and the Pacific. Water Security in a New World. Springer, Cham. [https://doi.org/10.1007/978-3-031-25463-5\\_20](https://doi.org/10.1007/978-3-031-25463-5_20)

<sup>191</sup> Times of India, 'Madurai central prison inmates start bazaar to market their produce,' 25 February 2014. <https://timesofindia.indiatimes.com/city/madurai/madurai-central-prison-inmates-start-bazaar-to-market-their-produce/articleshow/30970187.cms>

products, either for internal consumption, or for supply to other prisons or the local community. The activities include coffee roasting<sup>192</sup> and making bread,<sup>193</sup> pies,<sup>194</sup> and pastries.<sup>195</sup>

Measures need to be in place to ensure that any prison work associated with prison food production or other sustainability initiatives are rehabilitative in nature and do not violate fundamental human rights protections, including labour rights. Any form of prison-based work should benefit people in prison, including those being released and society at large, and should aim to equip people with marketable skills upon release. In some countries, prison farm work in particular has been associated with forced labour practices, poor and unsafe working conditions, and unfair wages.<sup>196</sup> A 2024 report by the UN Special Rapporteur on contemporary forms of slavery advocates recognising people in prison as 'workers' under national law, ensuring they receive labour protections such as fair wages aligned with the national minimum wage and adjusted for inflation, reasonable working hours, and safety measures.<sup>197</sup>

## Avoidable food waste prevention

The Food and Agriculture Organization of the United Nations (FAO) estimates that globally, 14% of the world's food, valued at \$400 billion, is lost every year between harvest and the retail market, with a further 17% wasted at the retail and consumer level.<sup>198</sup> Preventing food waste is therefore one of the most effective ways to reduce the environmental impact of the food industry. Minimising food waste is clearly a crucial step in promoting sustainability, reducing costs, and tackling the environmental impact of prisons.

To effectively tackle food waste in prisons it is critical to understand how much food is wasted and why. In prisons specifically, food waste largely consists of uneaten cooked food. In the **USA** for example, it is estimated that 200,000 tonnes of food waste are generated every year and that, while other waste materials tend to be recycled, uneaten food is transported away to be disposed of in landfills.<sup>199</sup> In California, research has shown that food and paper waste make up around 70% of the waste generated in prisons.<sup>200</sup> A study in Maine identified the potential to reduce food waste by 20%, leading to cost

---

<sup>192</sup> See, for example, Redemption Roasters, <https://redemptionroasters.com/>

<sup>193</sup> See, for example, Portland Press Herald, 'Learning to bake bread gives meaning to prisoners' days', 21 July 2019. <https://www.pressherald.com/2019/07/21/bread-alone-learning-to-bake-bread-gives-meaning-to-inmates-days/>

<sup>194</sup> See, for example, The Leader, 'Pies made by Wrexham's Berwyn Prison inmates dubbed 'as good on the inside as the outside', to be launched at Mold festival', 29 August 2018. <https://www.leaderlive.co.uk/news/16605174.pies-made-wrexhams-berwyn-prison-inmates-dubbed-as-good-inside-outside-launched-mold-festival/>

<sup>195</sup> Italy Magazine, 'One of Italy's Top Panettone is Made in an Italian Prison', 22 December 2021. <https://www.italymagazine.com/featured-story/one-italys-top-panettone-made-italian-prison>

<sup>196</sup> PRI, Global Prison Trends 2024. [https://cdn.penalreform.org/wp-content/uploads/2024/09/PRI\\_Global-prison-trends-report-2024\\_EN.pdf](https://cdn.penalreform.org/wp-content/uploads/2024/09/PRI_Global-prison-trends-report-2024_EN.pdf)

<sup>197</sup> Human Rights Council, Contemporary forms of slavery as affecting currently and formerly imprisoned people – Report of the Special Rapporteur on contemporary forms of slavery, including its causes and consequences, A/HRC/57/46, 19 July 2024, [www.ohchr.org/en/hr-bodies/hrc/regularsessions/session57/list-reports](http://www.ohchr.org/en/hr-bodies/hrc/regularsessions/session57/list-reports).

<sup>198</sup> FAO, 'Food loss and waste', <https://www.fao.org/nutrition/capacity-development/food-loss-and-waste/en/>

<sup>199</sup> Pollution online, 'Prison System Generates 200,000 Tons of Waste; Power Knot Offers Solutions. <https://www.pollutiononline.com/doc/prison-system-generates-tons-of-waste-power-knot-offers-solutions-0001>

<sup>200</sup> Pollution online, 'Prison System Generates 200,000 Tons of Waste; Power Knot Offers Solutions. <https://www.pollutiononline.com/doc/prison-system-generates-tons-of-waste-power-knot-offers-solutions-0001>

savings of nearly \$200,000.<sup>201</sup> One jail in **India** is reported to dispose of around 20 tonnes of food waste every month.<sup>202</sup>

One way to reduce food waste is to improve the quality of the meals provided, strengthen quality assurance, and improve menu planning and portion control. This requires an assessment of which types of food are most likely to be wasted. As part of its circular economy strategy, the **UK's** Ministry of Justice is planning to introduce food waste reporting metrics to track progress and pilot a structured approach for improving food waste segregation,<sup>203</sup> including creating food waste minimisation plans.<sup>204</sup> Another way to effectively manage unnecessary food waste and save resources is to improve food storage and preservation.

A 2009 study of food waste in **Australian** prisons, found that high levels of food waste were reported, particularly from the evening meal, with fish and seafood dishes being the meals that were most commonly wasted.<sup>205</sup> A study on the topic in **Italy** demonstrated that the most commonly wasted food items were bread, pasta, and fresh fruit because people in prison considered these to be of inferior quality or poorly prepared or cooked. Furthermore, it found that only 8% of survey respondents said that they eat all the food provided by the prison. In contrast, 98% of those who received food from home consumed it entirely.<sup>206</sup>

People in detention and prison staff can be involved in efforts to reduce food waste, including through awareness-raising, training on food waste management, and encouraging participation in waste reduction initiatives. These efforts can also provide valuable rehabilitation opportunities.



### Best Practices

In the **Netherlands**, following complaints that the lack of quality, flexibility, and choice in prison food were leading to large amounts of food waste, food contractors were required to minimise and monitor food waste both on-site and in the supply chain, including how food waste would be prevented. The Dutch Custodial Institution Agency also monitors perceptions of food by conducting a biannual survey of food quality at every prison, with a requirement that food quality be ranked at least 6/10 to reduce food waste.<sup>207</sup>

<sup>201</sup> Food Rescue Maine, 'Pilot 2: Maine State Prison and Bolduc Correctional Facility', 4 August 2023. <https://umaine.edu/foodrescuemaine/2023/08/04/solution-1-pilot-2-food-measuring-tracking-at-maine-state-prison-and-bolduc-correctional-facility/>

<sup>202</sup> The Times of India, 'Vadodara Central Jail is now a zero-waste prison', 27 February 2024. <https://timesofindia.indiatimes.com/city/vadodara/vadodara-central-jail-transforms-into-a-zero-waste-prison/articleshow/108030981.cms>

<sup>203</sup> Ministry of Justice, 'Climate change and sustainability strategy', 15 March 2024. <https://www.gov.uk/government/publications/climate-change-and-sustainability-strategy-moj/climate-change-and-sustainability-strategy>

<sup>204</sup> House of Commons Research Briefing, 'Food waste in the UK', 12 April 2024. <https://researchbriefings.files.parliament.uk/documents/CBP-7552/CBP-7552.pdf>

<sup>205</sup> University of Wollongong, 'Prison foodservice in Australia – systems, menus and inmate attitudes', 2009. <https://ro.uow.edu.au/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1123&context=hbspapers/>

<sup>206</sup> National Library of Medicine, 'Introduction of the nudging method in penitentiary facilities in Italy in view of food waste reduction: Preliminary date', 2019. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6452086/>

<sup>207</sup> European Commission, 'Reducing food waste by improving quality in prisons – Case study of the Dutch Custodial Institution Agency, Netherlands' [https://green-business.ec.europa.eu/green-public-procurement/good-practice-library/reducing-food-waste-improving-quality-prisons\\_en](https://green-business.ec.europa.eu/green-public-procurement/good-practice-library/reducing-food-waste-improving-quality-prisons_en)

Food waste prevention is most likely to be successful if there are official policies and procedures in place to guide and monitor waste prevention initiatives, along with systems to monitor the quality of food provided. In **Ireland**, the Food Waste Charter is a national voluntary agreement for businesses and canteen service providers to pledge their commitment to reducing food waste to which public bodies including prisons are encouraged to sign up.<sup>208</sup>

## Food waste disposal

Where food waste cannot be avoided, careful consideration should be given to the most environmentally friendly way to dispose of it. Increasingly, prison administrations seek to shift away from landfill sites, where decomposing food produces greenhouse gases, and are looking for more sustainable ways of addressing food waste, prompted by environmental reasons or as a cost-saving measure. In this regard, it has been pointed out that, particularly when prisons are located in remote areas, the cost of transporting food and food waste is expensive, inefficient, and can lead to security risks.<sup>209</sup> One estimate suggests that in the **USA** the average cost of sending one tonne of municipal solid waste to landfill is around \$53.<sup>210</sup>

**Australian** correctional facilities are estimated to generate as much as 20,000 tonnes of food waste per day.<sup>211</sup> With a National Food Waste Strategy<sup>212</sup> aiming to halve food waste across the country, including in prisons, by 2030, in line with Target 12.3 of the SDGs, food waste is being tackled at the local level in several facilities. At Lotus Glen Maximum Security Correctional Centre in Queensland, 200kg of food waste is being recycled daily to be used as fertiliser.<sup>213</sup> Casuarina prison in Western Australia is also reported to be saving thousands of dollars through on-site composting of vegetable waste, avoiding the cost of fertilisers.<sup>214</sup>

Many prisons across the world are investing in on-site food waste composting, compression, and drying equipment to reduce the volume of food waste produced. This not only saves costs in terms of off-site disposal and transportation, but the composted waste can also be used to generate power or resources for fertilising crops and to engage people in prison in waste management rehabilitation programmes.

---

<sup>208</sup> Food Waste Charter. <https://foodwastecharter.ie/>

<sup>209</sup> Powerknot.com, 'Stony Mountain Institution maintains safety with LFC security package', 5 April 2022. <https://powerknot.com/casestudies/stony-mountain-institution-maintains-safety-with-lfc-security-package/>

<sup>210</sup> Statista, 'Average cost to landfill municipal solid waste in the United States from 2020 to 2022, by region' <https://www.statista.com/statistics/692063/cost-to-landfill-municipal-solid-waste-by-us-region/>

<sup>211</sup> Ecoguardians, 'Aussie prisons finding cost-effective food waste solutions', 18 May 2018. <https://www.ecoguardians.com.au/post/australian-correctional-facilities-are-finding-a-cost-effective-solution-for-their-food-waste>

<sup>212</sup> Add footnote

<sup>213</sup> ABC News, 'Maximum security prisoners launch recycling scheme at Lotus Glen Correctional Facility', 27 July 2023. <https://www.abc.net.au/news/2023-07-27/queensland-prison-recycling-scheme-lotus-glen-correctional/102650950>

<sup>214</sup> Wa.gov.au, 'Green thumbs at Casuarina Prison diverting waste from landfill', 13 November 2023. <https://www.wa.gov.au/government/announcements/green-thumbs-casuarina-prison-diverting-waste-landfill#:~:text=Casuarina%20Prison's%20organic%20composting%20system,food%20which%20is%20more%20nutritious.&text=The%20prison's%20vegetable%20processing%20workshop,in%20off%2Dcuts%20every%20week.>

In one prison in Scotland, bulk food composting has also reduced security concerns, by decreasing the number of incoming vehicles for waste disposal.<sup>215</sup>

## Best Practices

Where feasible, on-site or off-site traditional composting schemes offer an efficient way of disposing of food waste more sustainably. In Vermont, **USA**, correctional facilities are reported to compost nearly 11,000 pounds of food in external compost facilities every week, keeping 572,000 pounds out of landfills every year. On-site composting reduces both costs and transportation needs further. Most correctional facilities in Washington State have on-site composting programmes, with one site reporting, more than 10 years ago, that it was saving \$30,000 annually on composting tipping fees alone.<sup>216</sup> An additional benefit of on-site composting is that the compost produced can help feed crops or be sold to local growers.

Vermicomposting, the use of earthworms to convert organic waste into fertiliser, is another food waste disposal method used in some prisons with the added benefit of producing nutrient-rich, non-chemical fertiliser. At Monroe Correctional facility in Washington State, **USA**, 100% of food waste from the kitchen is treated with wormeries, Bokashi composters (which break down food waste with bacteria) and black soldier flies, which also compost food waste.<sup>217</sup>

Different technologies for composting food waste are also being used in prisons around the world. In Lincoln Prison, **England**, the introduction of a food waste dryer is reported to have reduced the mass of food waste by 80%, with the output used for composting or fuel.<sup>218</sup> Other prisons use compression presses to remove water and oil from food waste.

On-site biodigesters are another useful tool for managing food waste. The machines digest wasted food on-site, limiting greenhouse gas emissions and reducing the expense and carbon footprint of transporting food waste to landfill. Several correctional facilities in **Canada** are now using biodigesters to process food waste, and it is reported that the UK prison service purchased 50 digesters during 2024 for use in prisons.<sup>219</sup>

In **Brazil**, the Sorriso Penitentiary uses a biodigester, to convert organic waste, such as fruit and eggshells, into biogas for kitchen use and liquid biofertilisers for the prison's garden.

<sup>215</sup> Tidy Planet Waste, Prison Services and High-Security Sites.

<https://tidyplanetwaste.com/sectors/prison-services-and-high-security-sites/>

<sup>216</sup> Biocycle.net, 'Correctional Facility Composting In Washington State', 21 August 2013.

<https://www.biocycle.net/correctional-facility-composting-in-washington-state/>

<sup>217</sup> Modern Farmer, 'The Visionaries Running a Worm Farm in Prison', 3 February 2022.

<https://modernfarmer.com/2022/02/prison-worm-farm-sustainability/>

<sup>218</sup> Greater Lincolnshire Food Partnership, 'HMP Lincoln Reduces Food Waste'

<https://lincolnshirefoodpartnership.org/2019/05/20/hmp-lincoln-reduces-food-waste/>

<sup>219</sup> Power Knot. Power Knot Receives Orders for the LFC Biodigester from His Majesty's Prison Service, 24 April 2024. <https://www.prnewswire.com/news-releases/power-knot-receives-orders-for-the-lfc-biodigester-from-his-majestys-prison-service-302125586.html>



### Six key steps towards more sustainable prison food systems

- ▶ Consider environmental sustainability in the procurement of food and catering equipment.
- ▶ Buy fresh food produced locally.
- ▶ Grow or produce food on-site.
- ▶ Improve food quality and diversify menu options.
- ▶ Minimise food waste.
- ▶ Recycle food waste to produce compost or energy.

## 4.10 Using sustainable farming practices



### Key findings

- ▶ Prison farms are not inherently good for the environment, and steps need to be taken to ensure that operations are as environmentally friendly as possible.
- ▶ Where space is lacking for large farms, it is still possible to consider small-scale growing projects combined with other sustainability measures. This could include rooftop or vertical gardening techniques, or the participation in off-site growing and farming schemes.

Prison farms are not a new concept, and many benefits are evident, including rehabilitative opportunities, and cost- and resource-saving potential. However, as with farming in general, prison farms are not inherently good for the environment. In fact, some farming practices, particularly monocropping and intensive animal farming are linked to loss of wildlife, biodiversity, soil depletion, and water pollution. Agriculture is reported to be the leading source of pollution in many countries, with pesticides, fertilisers, and other chemicals polluting freshwater, marine ecosystems, air, and soil.<sup>220</sup> Globally, the agricultural sector also consumes nearly 70% of the planet's freshwater, and clearing land for agriculture contributes to deforestation.<sup>221</sup> Additionally, the livestock farming sector is reported to be responsible for 11% of all greenhouse gas emissions.<sup>222</sup>

Conversely, when agricultural and livestock operations are managed sustainably, they can preserve and restore habitats, and improve soil health and water quality, while improving well-being and providing

<sup>220</sup> World Wildlife Fund, 'Sustainable Agriculture' <https://www.worldwildlife.org/industries/sustainable-agriculture#>

<sup>221</sup> World Wildlife Fund, 'Sustainable Agriculture' <https://www.worldwildlife.org/industries/sustainable-agriculture#>

<sup>222</sup> Vox, 'UN numbers say meat is bad for the climate. The reality is worse', 27 May 2023. <https://www.vox.com/future-perfect/23738600/un-fao-meat-dairy-livestock-emissions-methane-climate-change>

valuable rehabilitation opportunities to people in prison. There are many ways in which this is possible, and prison administrations should ensure food growing and production initiatives are as environmentally sustainable as possible.

## Nature-friendly/organic farming and permaculture

There are many examples of prisons around the world adopting organic farming<sup>223</sup> principles and permaculture approaches<sup>224</sup> to growing food and raising livestock.

In **Europe**, the project EcoFarms4Prisons aims to promote the implementation of environmentally friendly farming practices in prisons by training educators to teach organic and sustainable farming methods to people in prison. It is noted that despite the popularity of social farming in Europe, the integration of sustainable and organic farming into prison systems remains limited and people in prison often lack training in sustainable farming, maintenance, and biodiversity conservation.<sup>225</sup>

In Bavaria, **Germany** all agricultural activities in prisons were required to adopt organic farming methods in 2015.<sup>226</sup> In Oregon, **USA**, The Lettuce Grow Garden Foundation trains volunteers to educate people in prison on organic gardening practices, working in most of the State's correctional facilities.<sup>227</sup>



### Best Practices

In the Dubai Central Jail, **UAE** the greenhouse project aims to train 200 people in prison every year in organic farming.<sup>228</sup> The project intends to positively influence offenders' choices about growing food and eating healthily while also developing skills ahead of their release. The course provides accreditation to participants and has now expanded to include practical training on modern farming techniques such as hydroponics and aquaponics.<sup>229</sup> In the Belle Isle Correctional facility in **St Vincent and Grenadines**, people in prison receive training in organic home gardening and permaculture design, as part of the agricultural rehabilitation programme. Students can receive an internationally recognised Permaculture Design Certificate upon completion of the programme.<sup>230</sup>

<sup>223</sup> Organic is a system of farming and food production which uses ecologically based pest controls and biological fertilisers derived mainly from animal and plant wastes and nitrogen fixing crops. It avoids the use of chemical pesticides and synthetic fertilisers.

<sup>224</sup> In agriculture, permaculture has been defined an approach to land management based on agricultural ecosystems intended to be sustainable and self-sufficient (Oxford English Dictionary)

<sup>225</sup> <https://www.ecofarms4prisons.eu/>

<sup>226</sup> Ecofarms4prisons, 'Germany, the Systematic Review about Prison Farming Activities', 17 June 2024. <https://www.ecofarms4prisons.eu/germany-the-systematic-review-about-prison-farming-activities/>

<sup>227</sup> Organic Authority, '5 Organic Gardening Programs Training Inmates to Grow Food', 4 February 2014. <https://www.organicauthority.com/energetic-health/5-organic-gardening-programs-training-inmates-to-g>

<sup>228</sup> Grozine, 'Inmates Organic Farming', 14 June 2023. <https://www.grozine.com/2023/06/14/inmates-organic-farming/>

<sup>229</sup> Gulf News, 'Dubai Central Jail Inmates try hands on organic farming', 14 June 2023. <https://gulfnews.com/uae/dubai-central-jail-inmates-try-hands-on-organic-farming-1.96373153>

<sup>230</sup> Richmond Vale Academy, 'Ecological Farming at Belle Isle Correctional Facility', 15 February 2021. <https://richmondvale.org/belle-isle-correctional-facility-ecological-farming/>

Even where prison gardening and farming programmes cannot be fully organic – given that organic certification can be a difficult and lengthy process – it is possible for prisons to ensure that all initiatives are as environmentally friendly as possible. This could mean introducing wildlife and native plants, incorporating trees, intercropping, companion planting, natural pest control, using peat-free compost, and implementing environmentally friendly irrigation practices.

## Best Practices

Agroforestry is a nature-based approach to farming that combines agricultural crops and/or livestock with trees and shrubs to provide healthier soil and homes for wildlife. In Hawaii, **USA**, the Women's Community Correctional Centre of Oahu has piloted an agroforestry professional development programme, utilising previously overgrown and underused land on the grounds of the facility.<sup>231</sup> In **Uganda** a 2023 survey among prison farm workers showed that many supported the introduction of agroforestry practices as a way to reduce soil degradation and enhance productivity.<sup>232</sup> In **East Timor**, the Partnership for Sustainable Agroforestry has partnered with Gleno Prison to set up an agroforestry project to boost income and provide training for people in prison.<sup>233</sup>

Increasingly, food producers are looking at ways to grow crops without soil to enhance food sustainability and increase local food security. This includes aeroponics, where the roots of plants hang suspended and are sprayed with a nutrient-rich mist, and hydroponics, where plants are grown in liquid rather than soil. These methods are also used to create vertical and underwater farming. These and other sustainable food-growing systems are also being used in some prisons around the world. In **England**, Hewell prison now has an aeroponic container farm primarily used as a training tool while providing fresh salad, vegetables, and herbs for prison meals.<sup>234</sup>

In 2020, the United Nations Office on Drugs and Crime (UNODC) supported a prison in **Namibia** to develop a hydroponics project aimed at providing skills training while also helping tackle water shortages in the region – hydroponics has been shown to save up to 90% on water compared to traditional farming.<sup>235</sup> In Columbia, **USA**, one women's prison is expected to grow 48,000 pounds of lettuce every year in a hydroponic farm situated in recycled shipping containers.<sup>236</sup>

<sup>231</sup> Donoghue, C, 'Agroforestry Development Planning in State Correctional Facilities' <https://scholarspace.manoa.hawaii.edu/server/api/core/bitstreams/92f29a71-a089-4f23-aca9-9e3ec42a17fe/content>

<sup>232</sup> Kamanyire, N, 'The potential of agroforestry in Uganda prison farms: a case study of Isimba farm, Masindi district', 29 April 2023 <http://makir.mak.ac.ug/handle/10570/13245>

<sup>233</sup> Tatoli, 'Al Ba Futuru project cooperates with Prison Gleno to equip the inmates with valuable skills', 2 August 2022. <https://en.tatoli.tl/2022/02/08/ai-ba-futuru-project-cooperates-with-prison-gleno-to-equip-the-inmates-with-valuable-skills-and-boost-income-in-rural-community/12/>

<sup>234</sup> LettUs Grow, 'Rehabilitation via vertical farming trialled for the first time in UK prisons', 10 August 2022.

<sup>235</sup> UNODC, 'Serving society and the environment, UNODC launches hydroponics and soap production prisoner rehabilitation projects in Namibia', 13 February 2020. <https://www.unodc.org/dohadecclaration/en/news/2020/02/serving-society-and-the-environment--unodc-launches-hydroponics-and-soap-production-prisoner-rehabilitation-projects-in-namibia.html>

<sup>236</sup> SC Daily Gazette, 'SC women's prison to grow lettuce in recycled shipping containers', 14 November 2023. <https://scdailygazette.com/2023/11/14/sc-womens-prison-to-grow-lettuce-in-recycled-shipping-containers/>

Aquaponics is a system in which fish are farmed alongside plants in which the waste produced by the fish supplies the nutrients for plants to grow hydroponically. One prison in **Australia** has implemented an aquaponic system to grow basil, lettuce, strawberries and cucumbers for the prison kitchen.<sup>237</sup> The Aquaponics Association in the USA has developed a training and certification programme for people in prison in Texas with plans to extend it to other States.<sup>238</sup> In 2019, **Ghana's** Ministry of Fisheries and Aquaculture announced plans for every prison in the country to have its own fish farm to provide revenue for the prison service, while also addressing the national fish supply deficit.<sup>239</sup> Hydroponics offers a sustainable solution to food insecurity, especially in fragile and conflict-affected settings, by enabling the efficient production of nutritious crops in areas with limited access to arable land and resources, while enhancing rehabilitation efforts. Several prisons in **Haiti** also have aquaponics systems in place with the food provided through the programmes credited with reducing cases of malnutrition, beriberi, and scurvy in the prisons.<sup>240</sup> In **Mauritius**, an aquaponic and hydroponic training farm was established at Beau Bassin Prison in 2023, providing 38 women with vocational training and economic empowerment skills for their future.<sup>241</sup>

Of course, there are many prison facilities around the world that lack the capacity to implement large-scale gardening, agriculture, or other farming and food-growing projects due to limited space, insufficient resources, or due to security concerns. However, there are still many other measures such facilities can take to contribute to a more sustainable food system inside prisons, including buying from local suppliers, introducing small-scale growing projects such as roof gardening, reducing reliance on animal-based produce, and improving food waste management. Some prisons are also able to offer people in prison the opportunity to participate in off-site food-growing schemes.

## 4.11 Water management



### Key findings

- ▶ Prison systems typically consume vast amounts of water, but numerous measures can be implemented to reduce water usage and manage water waste more sustainably, including greywater and rainwater collection and purification systems.
- ▶ Water audits can help prison authorities assess water consumption and optimise resource management.

<sup>237</sup> ABC news, 'Lotus Glen prison farm gives inmates a sense of purpose, agricultural skills to help them find work', 17 November 2023. <https://www.abc.net.au/news/2023-11-18/lotus-glen-prison-farm-gives-inmates-sense-of-purpose/102970370>

<sup>238</sup> Aquaponics Association, 'Aquaponics Prison Certificate Program Set to Grow' <https://aquaponicsassociation.org/articles/aquaponics-prison-certificate-program-set-to-grow>

<sup>239</sup> Thefishsite.com, 'Prison fish farms promised across Ghana', 5 February 2019. <https://thefishsite.com/articles/prison-fish-farms-promised-across-ghana>

<sup>240</sup> Health through Walls: End of 2023 newsletter. <https://www.healththroughwalls.org/publications/2023-dec-newsletter.pdf>

<sup>241</sup> UNDP (2023). UNDP supports the set-up of an aquaponic and hydroponic training farm to empower women detainees at the Beau Bassin Prison. 3 March 2023. <https://www.undp.org/mauritius-seychelles/news/undp-supports-set-aquaponic-and-hydroponic-training-farm-empower-women-detainees-beau-bassin-prison>

Prisons consume a significant amount of water due to the large numbers of people often living and working inside them, from drinking water and food service, to showers, personal hygiene, cleaning, and laundry, as well as irrigation and vehicle washing. One report found that people in prison tend to use more water than those living in the community.<sup>242</sup>

However, water management can be made more sustainable through various methods. Green prison design should aim to minimise water usage during construction, such as by using recycled water during building or selecting materials that require less water in their manufacture.

It is equally important to incorporate effective water management systems into the design of prisons to reduce water consumption once the facility is operational. This can be achieved by installing greywater and rainwater collection systems to recycle water for irrigation or toilet flushing, and by installing water-efficient appliances such as low-flow showers, pulse or low-flow taps, and dual-flush toilets. Conducting regular water audits of facilities can also be extremely useful to assess water usage and manage it more effectively. Upgrading and improving plumbing systems can also significantly reduce water consumption. Additionally, water treatment systems can be installed to purify wastewater so that it can be reused for different purposes.

In Potenza Prison, **Italy**, a simple and replicable rainwater collection system has been implemented. The collected rainwater is used to irrigate seasonal vegetable gardens, a mushroom farm, and a botanical garden with aromatic plants such as lavender and rosemary for essential oils production. Similarly, in Trani Prison, rainwater collected from rooftops is stored in underground tanks, where a separate network pumps the water for flushing toilets.<sup>243</sup>

One block in Světlá nad Sázavou, Czechia includes retention basins for rainwater which are used for flushing toilets. Plans are also in place to use greywater for flushing toilets.<sup>244</sup> In the new prison at Judicial City in French Guiana, planners have incorporated vertical flow wetlands, a type of reed bed that can treat sewage naturally to a high standard, including removing ammonia.



### Best Practices

A wastewater treatment plant was constructed in Nyarugenge prison, Rwanda, in 2017 as part of the government's Green Rwanda growth initiative. The plant was designed to prevent the risk of waste contaminating the surrounding environment and groundwater reserves, treating the wastewater produced at the prison so that it can be recycled and reused. Additionally, all waste matter is used for the irrigation of the community sanitation garden to improve agricultural productivity. The system is also reported to use environmentally friendly and locally sourced materials.<sup>245</sup>

<sup>242</sup> WaterWorld, Water Sustainability in Prisons, 7 January 2016.

<https://www.waterworld.com/water-utility-management/article/14070022/water-sustainability-in-prisons>

<sup>243</sup> Alessandro Pastina. Interview. 09 December 2024

<sup>244</sup> Information from member of expert group

<sup>245</sup> Ktpress, 'Nyarugenge Prison Gets Waste Treatment Plant', 7 December 2017.

<https://www.ktpress.rw/2017/12/nyarugenge-prison-gets-waste-treatment-plant/>



### Steps to reduce water usage in the design and operation of prisons

- ▶ Limit water use in construction.
- ▶ Conduct water audits to understand where savings and improvements can be made.
- ▶ Utilise alternatives to mains water where possible.
- ▶ Tackle water wastage by fixing leaking pipes and faulty taps.
- ▶ Upgrade plumbing and drainage systems to enhance water efficiency.
- ▶ Install more water-efficient devices, such as taps, showers, and toilets.
- ▶ Promote water conservation among staff and people in prison, including through awareness-raising.
- ▶ Collect and recycle greywater and rainwater, using it instead of mains water where possible.
- ▶ Dispose of wastewater sustainably, including through efficient wastewater treatment systems.

## 4.12 Other waste materials



### Key findings

- ▶ There are many ways to minimise prison waste, with the primary goal being to reduce unnecessary waste while reusing and recycling as many items as possible, combined with more sustainable waste disposal systems and processes.
- ▶ Prison recycling, repair, and reuse schemes can also provide valuable work and rehabilitation opportunities for people in prison.

Aside from food, prisons consume many products and generate many other types of waste material, from toilet paper to plastic cutlery, cups, plastic bottle and cans, to food packaging and general rubbish. For waste reduction programmes to be successful, it is important that authorities monitor and report on the quantities and types of waste produced to identify the best reduction strategies and track progress.

Food items for sale in many prison shops, canteens, and vending machines are often highly packaged and some prisons that allow families to bring in food often restrict this to pre-packaged food items due to concerns about smuggling contraband. For example, in **Singapore**, visitors can only donate pre-approved snack packs.<sup>246</sup> In the **USA**, New York is the only State reported to permit unpackaged fresh

<sup>246</sup> Singapore Prison Service, Visit Items. <https://www.sps.gov.sg/visit-matters/other-visit-matters/visit-items/>

fruit and vegetables in care packages, but only if they are purchased from approved vendors who must comply with certain requirements, rather than being sent directly by families.<sup>247</sup>

Single-use packaging may be more necessary in large institutions such as prisons for reasons of hygiene and public health, but most materials used are recyclable and should not be dumped into landfill. Where possible, authorities should also use eco-friendly toilet paper, soap and other items, taking care to ensure they use products which are genuinely sustainable.<sup>248</sup>

Prisons may also produce more plastic waste than other large public institutions due to safety and security concerns, particularly around the use of metal cutlery, ceramic plates and tin cans. For example, in 2023, the prison officers' trade union in **England** called for a ban on all tinned food due to its potential use as a weapon, proposing that it be replaced by plastic pouches and containers and that ceramic plates and cups to be prohibited.<sup>249</sup>

Where security concerns are paramount, authorities can also consider the use of biodegradable and compostable materials for catering instead of single-use plastic. Some prison authorities, including those in Lower Saxony, **Germany**, actively promote the use of reusable dishes and cutlery and prefer larger containers of produce such as jam rather than individual single-use items.<sup>250</sup> People in prison are encouraged to recycle any single-use containers such as drinks cans through a deposit return scheme. However, prisons in **Ireland** are opting out of a similar UK-wide scheme due to concerns that items could be used in black market trade.<sup>251</sup>

Prisons may also produce electronic waste, including computers, servers, printers, and telephones as well as clinical waste from medical centres, furniture, and construction and demolition materials. The New South Wales Corrective Department in Australia includes all of these items in its waste management strategy.<sup>252</sup> Any e-waste and chemical and medical waste management strategy needs to incorporate stringent safeguards due to potential adverse health risks.<sup>253</sup>

---

<sup>247</sup> University of California Nutrition Policy Institute, 'Farm to Corrections – Promising practices from across the United States', May 2023. <https://ucanr.edu/sites/NewNutritionPolicyInstitute/files/384207.pdf>

<sup>248</sup> See, for example, Bhavnani, S, Ethical Consumer magazine, Ethical Toilet Paper, 31 May 2023. <https://www.ethicalconsumer.org/home-garden/shopping-guide/ethical-toilet-paper>

<sup>249</sup> Insidetime, 'POA calls for ban on tins in prisons', 14 June 2023. <https://insidetime.org/newsround/poa-calls-for-ban-on-tins-in-prisons/>

<sup>250</sup> Presented at Europris Sustainability in Prisons workshop – How to save energy, water, waste and costs (2024), <https://www.europris.org/events/sustainability-in-prisons-workshop-2024/>

<sup>251</sup> Irish Mirror, 'Prisons opt out of Re-turn scheme over fears containers could be used as currency in contraband trade', 10 August 2024. <https://www.irishmirror.ie/news/irish-news/prisons-opt-out-re-turn-33432295>

<sup>252</sup> [https://dcj.nsw.gov.au/content/dam/dcj/corrective-services-nsw/documents/Environmental\\_Management\\_Plan.pdf](https://dcj.nsw.gov.au/content/dam/dcj/corrective-services-nsw/documents/Environmental_Management_Plan.pdf)

<sup>253</sup> World Health Organization, E-waste, [https://www.who.int/news-room/fact-sheets/detail/electronic-waste-\(e-waste\)](https://www.who.int/news-room/fact-sheets/detail/electronic-waste-(e-waste))



## Best Practices

The **Northern Ireland** Prison Service has been recycling and diverting waste products for over 14 years and has separate contracts for different waste streams, incorporating general waste, recyclables, food waste, cooking oil, clinical waste, hazardous waste and electrical and electronic equipment no longer in use, including a large laptop recycling project that generates significant income.<sup>254</sup> The recycling project at Maghaberry Prison is run by people in prison who gain qualifications, with some being offered jobs with local recycling companies upon release.<sup>255</sup> The prison service has also been involved in a large-scale project to recycle unused COVID-19 lateral flow tests.<sup>256</sup>

There are many other positive examples of initiatives around the world that seek to reduce, recycle, repair, and reuse waste generated in prisons, often combined with effective work and rehabilitation programmes. In **Ireland**, the prison service used to send approximately 1,200 used mattresses to landfill, where the synthetic foam, fibres and chemicals would penetrate the soil and could eventually reach the water system. Since 2021, the service has been recycling or repurposing the mattresses, also providing employment for people in prison.<sup>257</sup>

In Valdice prison in **Czechia**, a paper press machine is used to compress paper waste products from all Czech prisons and turn them into briquettes.<sup>258</sup>

---

<sup>254</sup> Presented at Europris Sustainability in Prisons workshop – How to save energy, water, waste and costs (2024), <https://www.europris.org/events/sustainability-in-prisons-workshop-2024/>

<sup>255</sup> Northern Ireland Department of Justice, Prisoners' recycling project slashes landfill waste at Maghaberry; 20 March 2018. <https://www.justice-ni.gov.uk/news/prisoners-recycling-project-slashes-landfill-waste-maghaberry>

<sup>256</sup> Presented at Europris Sustainability in Prisons workshop – How to save energy, water, waste and costs (2024), <https://www.europris.org/events/sustainability-in-prisons-workshop-2024/>

<sup>257</sup> European Union, 'Social and environmental criteria in the Irish Prison Service's mattress recycling initiative,' [https://green-business.ec.europa.eu/green-public-procurement/good-practice-library/social-and-environmental-criteria-irish-prison-services-mattress-recycling-initiative\\_en?prefLang=sv](https://green-business.ec.europa.eu/green-public-procurement/good-practice-library/social-and-environmental-criteria-irish-prison-services-mattress-recycling-initiative_en?prefLang=sv)

<sup>258</sup> Information from member of expert group.



## Best Practices

La Joyita prison in **Panama** is one example where about 80% of all the prison's waste is now being recycled. As part of the programme, people in prison collect, separate, recycle, and sell waste, and their work can earn them reduced sentences. Used plastic is turned into plastic bricks for construction, and all metal is crushed to be sold. Ten years after its inception, 500 people in prison are employed within the framework of the project. Recidivism rates are also believed to have dropped from 65% to 45% with no one involved in the programme reported to have reoffended. This scheme has now been introduced in four other prisons in Panama, and prisons in **Honduras, Paraguay, Colombia, and Nicaragua** have shown interest in replicating the scheme.<sup>259</sup>

In the **UK**, prisons with waste management units create work for nearly 1,000 people, with nearly 4,000 tonnes of waste being recycled, reportedly saving £2.5million per year. Between 2018 and 2022, 1,791 people had gained waste management qualifications to help them find jobs upon their release. People in prison are also engaged in programmes to fix broken equipment such as TVs and phones so that they can be reused rather than sent to landfill. Some prisons have boot workshops where people in prison repair old work boots, reportedly saving thousands of pounds in replacement costs.<sup>260</sup>

While the initial investment required to start large-scale recycling projects may seem prohibitive, especially where specialised machinery is needed, significant longer-term cost savings are achievable. AT Maghaberry Prison in **Northern Ireland**, authorities spent £150,000 on a material recovery facility to manage and process waste, but this quickly offset the £62,000 spent annually on skips and waste disposal.<sup>261</sup>

People in prison may also be employed to repair or recycle waste produced in their local community. For example, at La Moye Prison in **Jersey**, people help reduce waste produced by the local fishing industry, with more than 14 tonnes of rope, 68 fishing posts and 2,000 metres of netting sorted for recycling during 2023. At Makati City Jail in the **Philippines**, authorities implemented a scheme in 2012 where those held in the facility upcycled old hotel slippers into colourful bedroom slippers.<sup>262</sup> People in other prisons and jails across the Philippines also create various craft items, such as lanterns and home décor, using recycled materials like wire, paper, and plastic bottle.<sup>263</sup>

<sup>259</sup> The Guardian, 'Left to rot: how a prisoner cleaned up Panama's dirtiest jail – and its inmates', 7 March 2024. <https://www.theguardian.com/global-development/2024/mar/07/la-joyita-jail-panama-prisoners-gangs-squalor-waste-recycling-ecosolidos-geoazul#>

<sup>260</sup> Ministry of Justice, 'Circular economy strategy summary' <https://www.gov.uk/government/publications/circular-economy-strategy-summary-moj/circular-economy-strategy-summary#>

<sup>261</sup> Ministry of Justice NI, 'Prisoners' recycling project slashes landfill waste at Maghaberry', 20 March 2018. <https://www.justice-ni.gov.uk/news/prisoners-recycling-project-slashes-landfill-waste-maghaberry>

<sup>262</sup> Yahoo news, 'Makati City Jail inmates turn trash into cash', 24 April 2012. <https://sg.news.yahoo.com/blogs/the-inbox/makati-city-jail-inmates-turn-trash-cash-114147754.html#>

<sup>263</sup> Philippine News Agency, 'For Baguio inmates, merry handicraft-making goes beyond Christmas', 25 December 2018. <https://www.pna.gov.ph/articles/1056747>

## 4.13 Conservation and biodiversity projects



### Key findings

- ▶ People in prison can be a valuable resource and play a vital role in supporting local nature conservation, recovery, and biodiversity projects.
- ▶ Participation in such projects can also positively impact both physical and mental health and contribute to effective rehabilitation.

Many prison sustainability projects around the world focus on environmental initiatives, including local conservation and biodiversity projects or other environmental schemes within the local community. These projects can be particularly beneficial for the physical and mental health of people in prison, as prison environments often lack access to nature.

Projects that involve giving back to society and the local environment also help people in prison reintegrate into their local community and may help them find potential future employment. One such initiative in the **USA** focused on local tree planting to help cool local neighbourhoods and lessen the effects of climate change, with those participating gaining skills for work after their release.<sup>264</sup> Elsewhere, projects have involved building nest boxes for bats<sup>265</sup> and endangered birds, re-establishing native wetland plants, protecting vulnerable hedgehog populations,<sup>266</sup> and growing plants specifically to provide food and habitat for migrating butterflies.<sup>267</sup>

Nature-based community projects have also involved animals, birds, or insects. Two prisons in Washington State, USA have implemented programmes that rear and release endangered butterflies, with at least 20,000 caterpillar and adult butterflies released since 2011. Participants are also involved in scientific research to determine which native host plants are optimal for egg laying.<sup>268</sup> Another prison specialised in helping sick turtles and preparing them for their return to the wild.<sup>269</sup>

<sup>264</sup> One Neighbourhood Builders, 'Formerly Imprisoned Men, Women Get New Chance Through "Green Reentry"', 10 November 2021. <https://oneneighborhoodbuilders.org/formerly-incarcerated-men-women-get-new-chance-through-green-reentry/>

<sup>265</sup> The Guardian, 'Jailbirds creating eco-havens in prison', 21 September 2008. <https://www.theguardian.com/society/2008/sep/21/prisonsandprobation.conservaion>

<sup>266</sup> Telegraph, 'Prisoners have been deployed to help protect hedgehogs report from MOJ reveals', 2 May 2019. <https://www.telegraph.co.uk/news/2019/05/02/prisoners-have-deployed-help-protect-hedgehogs-report-moj-reveals/>

<sup>267</sup> Ecology and Society, 'Impacts of conservation activities on people who are imprisoned: a case study based on qualitative and quantitative analyses' <https://ecologyandsociety.org/vol27/iss3/art44/>

<sup>268</sup> The Evergreen State College and Washington State Department of Corrections Sustainability in Prisons Project, 'Taylor's Checkerspot Butterfly Program' <https://sustainabilityinprisons.org/spp-programs-in-wa/conservation/taylors-checkerspot-butterfly-program-2/>

<sup>269</sup> The Chronicle, 'Prisoners Prepare Turtles for Release', 26 May 2016. <https://www.chronline.com/stories/prisoners-prepare-turtles-for-release,51638>

In **England** there are nine prisons that are set within Sites of Special Scientific Interest (SSSIs), including two European-designated sites and two sites that are internationally designated for their wetlands and wading birds. Thirty-nine additional sites are noted to be of local biodiversity significance.<sup>270</sup> One report has noted that some threatened species, including barn owls, kingfishers, adders and slow worms even inhabit prison grounds.<sup>271</sup> In 2018, however, only two of these sites were reported to be in a 'favourable condition' (in a healthy state and being conserved by appropriate management).<sup>272</sup>

In some countries land owned by the prison has become a safe haven for wildlife due to the unique properties of prison grounds. In Maghaberry prison in **Northern Ireland**, 6 acres of unused land between the perimeter fences and the prison walls became a sanctuary for lapwings, a near-threatened species of bird,<sup>273</sup> due to a combination of swampy short grass – a result of the clay ground left over from the prison's foundations - and the absence of predators like foxes and badgers, which could not enter the area.<sup>274</sup>

As part of **Japan's** efforts under its SDGs commitments, the Ministry of Justice has signed agreements with the local government, private companies, and environmental NGOs at the Kitsuregawa Rehabilitation Program Center to have people in prison engage in observation, research, and conservation activities for native and endangered species that live near the prison's surroundings.<sup>275</sup> Through the activity of conserving the endangered *Zizina emelina* butterfly population by growing food plants for the butterfly inside the prison and then transplanting them outside the prison, people in prison have developed a sense of social contribution and self-efficacy.<sup>276</sup> The area is also maintained without the use of herbicides in order to conserve the native ecosystem and help people in prison learn how to conserve rare plants, such as the *Ophioglossaceae* through hands-on activities. These activities have also been found to help people in prison with teamwork, communication, and observation skills as well as the ability to express their findings accurately.<sup>277</sup>

The **UK** Ministry of Justice's biodiversity strategy is also committed to engaging both staff and people in prison in helping to improve the wildlife on its wider estate through an active volunteer network, developing partnerships with wildlife charities and carrying out a range of awareness-raising activities. The latter includes creating new ponds and placing barn owl nesting boxes across the prison estate and

---

<sup>270</sup> The Evergreen State College and Washington State Department of Corrections Sustainability in Prisons Project, 'Making the difference to wildlife and inmates on the England and Wales Prison and Probation Service Estate', 31 August 2017. <https://sustainabilityinprisons.org/blog/2017/08/31/making-the-difference-to-wildlife-and-inmates-on-the-england-and-wales-prison-and-probation-service-estate/>

<sup>271</sup> The Guardian, 'Jailbirds creating eco-havens in prison', 21 September 2008. <https://www.theguardian.com/society/2008/sep/21/prisonsandprobation.conservaion>

<sup>272</sup> Ministry of Justice, 'The Ministry of Justice biennial ecology update', 2016-2018. <https://assets.publishing.service.gov.uk/media/65116b332f404b000dc3d841/moj-biennial-ecology-update-2016-18.pdf>

<sup>273</sup> The Wildlife Trusts, Lapwing, <https://www.wildlifetrusts.org/wildlife-explorer/birds/wading-birds/lapwing>

<sup>274</sup> Belfast Telegraph, Jail sanctuary for threatened bird, 20 April 2015. <https://www.belfasttelegraph.co.uk/news/northern-ireland/jail-sanctuary-for-threatened-bird/31155345.html>

<sup>275</sup> Ministry of Justice of Japan, 'Initiatives towards achieving the SDGs at the Kitsuregawa Rehabilitation Program Center', 17 January 2023. [https://www.moj.go.jp/kyousei1/kyousei07\\_00027.html](https://www.moj.go.jp/kyousei1/kyousei07_00027.html)

<sup>276</sup> Takahashi, Nobuhiro. Interview. 05 November 2024.

<sup>277</sup> Urabe, Tetsuro, Interview. 05 November 2024.

participation in nationwide wildlife surveys. The department also helped to run ecology training courses.<sup>278</sup> Other projects include local woodland management in conjunction with the Forestry Commission<sup>279</sup> and community clean-up projects.<sup>280</sup>

### **Best Practices**

Beekeeping is an activity that has been introduced into numerous prisons around the world, including at Le Havre prison in **France**,<sup>281</sup> **Slovenia**,<sup>282</sup> **Germany**,<sup>283</sup> **Canada**,<sup>284</sup> and **Japan**.<sup>285</sup> These programmes not only benefit people psychologically and educationally, but also help restore bee populations and provide additional pollinators for local plants. In **Ghana**, prison staff have undergone beekeeping training to improve the local ecosystem while also collecting honey and beeswax for use in making cosmetic products.<sup>286</sup> Bug hotels are also reported to be common in many prison horticulture and garden areas in Irish prisons.

## 4.14 Community involvement and benefits

### **Key findings**

- ▶ Partnerships with local communities and organizations can prove extremely beneficial in sustainability efforts, with clear benefits for prison populations, communities, and the environment.

<sup>278</sup> National Audit Office, Ministry of Justice: Environmental sustainability overview 2017.  
<https://www.nao.org.uk/wp-content/uploads/2017/11/Ministry-of-Justice-environmental-sustainability-overview-2017.pdf>

<sup>279</sup> Forest Research, 'Evaluation of Forestry Commission Offenders and Nature (O&N) schemes'  
<https://www.forestresearch.gov.uk/research/evaluation-of-forestry-commission-offenders-and-nature-on-schemes/>

<sup>280</sup> Ministry of Justice, 'Circular economy strategy summary' <https://www.gov.uk/government/publications/circular-economy-strategy-summary-moj/circular-economy-strategy-summary#>

<sup>281</sup> The honeybeesphotographer, 'Honey Bees in Jail/France'  
<https://www.thehoneybeesphotographer.com/gallery-image/Honey-Bees-in-Jail-France/G0000fX7xxUCeFk/I0000B1Imf7U.mvl>

<sup>282</sup> Foode.eu, "'Prison Honey" – Urban beekeeping for rehabilitation and social inclusion'  
<https://foode.eu/prison-honey-urban-beekeeping-for-rehabilitation-and-social-inclusion/>

<sup>283</sup> Asharq al-Awsat, 'German Prisons Use Bees to Teach Inmates Patience', 25 June 2019.  
<https://english.aawsat.com/home/article/1783491/german-prisons-use-bees-teach-inmates-patience>

<sup>284</sup> CBC news, 'Prison honey bee program a sweet success', 12 September 2019.  
<https://www.cbc.ca/news/canada/ottawa/beekeeping-prison-kingston-collins-bay-joyceville-1.5277109>

<sup>285</sup> Takahashi, Nobuhiro. Interview. 05 November 2024.

<sup>286</sup> Ghanaian Times, '20 prison officers undergo training in beekeeping', 21 December 2021.  
<https://ghanaiantimes.com.gh/20-prison-officers-undergo-training-in-beekeeping/>

Environmental sustainability projects in prisons have also been used to benefit local communities and charities and using local contractors and suppliers can also help boost local economies.

In **Northern Ireland** a project that produces briquettes from shredded paper has generated around 2,000 bags of briquettes, many of which have been donated to local charities.<sup>287</sup> In the **UK**, bicycles renovated by people in prison have been donated to healthcare workers in local hospitals. The project also enables people to gain new skills in bicycle maintenance and provides post-release job opportunities.<sup>288</sup> One prison farm in **Kenya** supplies vegetables to other prisons as well as providing cheap and nutritious food to the local community.<sup>289</sup> A prison in **Portugal** has a vertical farm consisting of 40 aeroponic towers managed by people in prison. The farm is expected to produce approximately 1,800 plants per month for use in the prison kitchen,<sup>290</sup> and currently much of the food produced is donated to local families. In New Zealand, fresh vegetables grown at Canterbury prison are donated to food banks and other charities in the local area.<sup>291</sup>

### **Best Practices**

In **Japan**, at the Kitsuregawa Rehabilitation Program Center,<sup>292</sup> under the guidance of local agricultural experts, some of the food waste generated in the prison is composted and used to grow organic vegetables. The harvested vegetables are donated to local welfare facilities, and people in prison cook them as part of their vocational training and sell them at local stores. Through these activities and feedback from the local community, people in prison learn about the significance of plant-based food and the importance of contributing to society.<sup>293</sup>

In **Mauritius**, women in prison have been engaged in a project to raise endemic plants to be used for local reforestation. This project is coupled with formal training in plant propagation and nursery management skills for the women.<sup>294</sup> In a unique project in Brazil, combining physical activity with energy saving, people in prison pedal stationary bikes to generate energy to illuminate streetlights in the local town.<sup>295</sup>

<sup>287</sup> NI Department of Justice, 'Prisoners' recycling project slashes landfill waste at Maghaberry', 20 March 2018.

<https://www.justice-ni.gov.uk/news/prisoners-recycling-project-slashes-landfill-waste-maghaberry>

<sup>288</sup> InfraRed Capital Partners, Prisoners will recycle hundreds of bikes for hospital staff through our Lifecycle Project, 11 October 2021. <https://www.ircp.com/news/prisoners-will-recycle-hundreds-bikes-hospital-staff-through-our-lifecycle-project/>

<sup>289</sup> Standard media, 'Prison farms vegetables to free community from famine', 21 October 2019.

<sup>290</sup> Agrotonomy, 'Vertical Farming in a Prison', 4 May 2023. <https://agrotonomy.com/vertical-farming-in-a-prison/>

<sup>291</sup> Corrections.govt.nz, 'Prison partnership proves productive', 26 January 2022.

[https://www.corrections.govt.nz/news/2022/prison\\_partnership\\_proves\\_productive](https://www.corrections.govt.nz/news/2022/prison_partnership_proves_productive)

<sup>292</sup> Ministry of Justice of Japan, 'Initiatives towards achieving the SDGs at the Kitsuregawa Rehabilitation Program Center', 17 January 2023. [https://www.moj.go.jp/kyousei1/kyousei07\\_00027.html](https://www.moj.go.jp/kyousei1/kyousei07_00027.html)

<sup>293</sup> Yagisawa, Yosuke/ Shogakukan-shueisha Productions Co., Ltd. , Interview. 06 November 2024.

<sup>294</sup> NewsGov, 'Endemic Plant Nursery inaugurated at the Open Prison for Women', 9 May 2024.

<https://www.govmu.org/EN/newsgov/SitePages/Endemic-Plant-Nursery-inaugurated-at-the-Open-Prison-for-Women.aspx>

<sup>295</sup> NBC news, 'inmates at Brazil prison pedal for electricity – and their freedom', 11 July 2012.

<https://www.nbcnews.com/id/wbna48144469>



## Best Practices

In Richmond Hill prison in **Grenada**, a biogas generator linked to a farming rehabilitation project on the prison farm provides energy to heat in the facility and the waste is used as organic fertiliser to replace chemical fertiliser. As part of their rehabilitation project, people in prison also assist with a biogas generator plant in a local college to gain additional expertise in biogas technology. These projects also directly benefit the local community and conservation efforts by reducing the amount of pollutants entering the sea from the island.<sup>296</sup>

In other situations, community-led organisations, NGOs, local businesses, universities and other academic institutions are able to support sustainability initiatives in prisons, and it is good practice to engage local communities in projects from an early stage as the involvement of those living and working in prisons, as well as local communities, is key to good environmental outcomes. At Jilava prison in **Romania**, organisers of sustainability initiatives carried out promotional activities in the community including exhibitions, awareness-raising campaigns, and advertising volunteering opportunities.<sup>297</sup>

The Kigali Institute of Science, Technology and Management has developed and installed large-scale biogas plants in prisons in **Rwanda** to generate energy for cooking, with the effluent used as fertiliser for crop production. The partnership was formed in order to tackle the major health hazard of sewage disposal from large prisons, typically holding 5,000 people, affecting both the prison and the surrounding area. The use of biogas to serve around 30,000 people in prison was reported to reduce fuelwood consumption by about 27,000m<sup>3</sup> per year in 2005, representing a saving of about 10,000 tonnes of CO<sub>2</sub> per year. The project also contributes to rehabilitation, with people in prison trained to operate the systems. Already in 2005, 250 individuals had received such training.<sup>298</sup>

There are already many prison sustainability projects, particularly those that directly involve people in prison, which have been established and run by civil society organisations or private companies. For example, in **Czechia**, a private company that makes household linen items, donates its leftover textiles to two women's prisons where the materials are used to make toys for children.<sup>299</sup> Other rehabilitation projects focused on sustainability are run directly by NGOs. However, these projects are often dependent on securing and maintaining adequate funding, so the support of prison administrations for them is crucial for their long-term success.

<sup>296</sup> Deutsche Welle, 'Grenada – Biogas made in prison benefits whole island', 5 December 2017, <https://www.dw.com/en/grenada-biogas-made-in-prison-benefits-whole-island/video-38815813>

<sup>297</sup> ICPA – Prison Futures – Greening Prisons

<sup>298</sup> Ashden Climate Solutions in Action, The Kigali Institute of Science, Technology and Management (KIST)/Large-scale biogas for sanitation, 2005. <https://ashden.org/awards/winners/kist/>

<sup>299</sup> Vscr.cz, Šetříme životní prostředí <https://www.vscr.cz/organizacni-jednotky/veznice-svetla-nad-sazavou/clanky/detail/setrime-zivotni-prostredi>

## Best Practices

In Washington State, **USA**, the Sustainability in Prisons project is a partnership between the Evergreen State College and the State Department of Corrections. The goal of the organisation is to empower sustainable change by bringing nature, science, and environmental education into prisons with all programs awarding academic credits to students. Programmes include those focused on environmental education, conservation, sustainable operations, community contributions, and restorative nature. The community-based programme transforms potential waste into useful items, and the initiative now donates quilts to homeless shelters, refurbished computers for schools, and grows produce for food banks. In 2023, 81 students earned a total of 418 college credits through SPP's education portfolio model.<sup>300</sup>

## 4.15 Citizen science

People in prison can be uniquely placed to participate in citizen science projects, in which members of the public participate in crowd-sourced research and monitoring projects. Citizen science is commonly used in projects related to ecology, biology, and conservation. There are several positive examples of prisons that have adopted such programmes including, in the **UK** where people from 61 prisons participated in the annual 'Big garden birdwatch,' in which the public takes part in a national wildlife survey to track the birds living in their local area.<sup>301</sup>

## Best Practices

At a prison in Washington State, **USA**, people in prison have participated in a restoration citizen science project to cultivate slow-growing mosses for the horticulture industry to reduce the collection of moss from the wild.<sup>302</sup> A study of two other citizen science projects in the **USA** found that most participants gained knowledge about science and conservation, and a quarter reported psychological benefits.<sup>303</sup>

## 4.16 Awareness raising and formal training and education

Education and training of staff and people in prison about the environment are key to the success of any sustainability project. A thorough assessment of the existing knowledge and interest among staff and people in prison should be the first step. This should be followed by targeted training and awareness-

<sup>300</sup> Sustainability in Prisons Project, <https://sustainabilityinprisons.org/>

<sup>301</sup> BBC News, 'Birdwatching takes flight in Britain's prisons', 29 January 2011. <https://www.bbc.co.uk/news/uk-12310187>

<sup>302</sup> ESA, 'Collaborating with the imprisoned in ecological restoration, education, and sustainability', 25 August 2017. <https://www.esa.org/esablog/2017/08/25/collaborating-with-the-incarcerated-in-ecological-restoration-education-and-sustainability/>

<sup>303</sup> Ecology and society, <https://ecologyandsociety.org/vol27/iss3/art44/>

raising measures to ensure that all individuals involved in a project, including both people in prison and prison staff, are committed to environmental principles, demonstrate responsible citizenship and take personal responsibility for sustainability principles. One research project found that a lack of knowledge among personnel was a common barrier to the success of such initiatives.<sup>304</sup>

Changing attitudes and fostering a culture of responsibility towards the environment among both people in prison and staff can go a long way to ensuring the success of specific programs, but also towards tackling immediate sustainability issues such as reducing food waste, limiting energy and water use, and reducing reliance on single-use plastics. This must be accompanied by strong institutional support for education and training programmes from prison authorities.



### Best Practices

In **Kenya**, by June 2024, 7,000 people in prison had been trained in environmental protection and 95% of staff had received training in green reintegration programmes.<sup>305</sup> In Italy, prison authorities have introduced training for staff and people in prison on sustainable water management, including awareness-raising on the public and ethical value of water, understanding the processes needed to make water drinkable, and providing visual materials on water-saving tips.<sup>306</sup>

Peer-led programmes and ideas originating from people in prison and staff members are also more likely to be successful, as they already have the buy-in of those concerned. The Sustainability in Prisons project in Washington State, **USA**, has implemented several peer-led or peer-facilitated programmes, including the Foundations in Gardening and Foundations in Composting curricula.<sup>307</sup> The Greenhouse Project in Dubai, **UAE**, emerged from the facility's innovation clubs, which collect suggestions from people in prison.<sup>308</sup>



### Best Practices

There is much potential for engaging people in prison and staff, as well as visitors and service providers in sustainability initiatives. Such initiatives could include choosing a day of environmental action to celebrate nature, incorporating sustainability projects in prison publications, posters, and educational materials, and collaborating with experts and national sustainability organizations. In

<sup>304</sup> Yadao, K, Sustainable Waste Management for Hawaii's Correctional Facilities: Barriers to Implementation, 2022. <https://scholarspace.manoa.hawaii.edu/server/api/core/bitstreams/09ac3fc6-2384-4e1f-a6fb-73bcc6258731/content>

<sup>305</sup> National Council on the Administration of Justice, Strategic Guiding Framework for Greening Kenya's Justice System 2024. <https://qr.me-qr.com/mobile/pdf/ac8966de-1075-4a56-a1a2-56cae524a061>

<sup>306</sup> Alessandro Pastina, "Water saving application in Prison System", 25 September 2024. EuroPris 'Sustainability in Prisons' Workshop.

<sup>307</sup> Sustainability in Prisons Project, 2023 Annual Report, <https://sustainabilityinprisons.org/>

<sup>308</sup> Gulf News, 'Dubai Central Jail Inmates try hands on organic farming', 14 June 2023. <https://gulfnews.com/uae/dubai-central-jail-inmates-try-hands-on-organic-farming-1.96373153>

Jilava prison in **Romania**, authorities teamed up with local and national celebrities to promote certain projects. The prison staff union was also invited to become involved in sustainability initiatives, with staff and people in prison participating in tree-planting together to encourage cooperation. The **Ghana** prisons service has pledged its support for the official Green Ghana Day.<sup>309</sup>

## 4.17. Monitoring and evaluation

Prison sustainability projects should be carefully monitored and evaluated to determine their true environmental impact, their positive outcomes for people in prison and prison staff, and other benefits such as enhanced conditions of detention, improved mental and physical health, and cost savings for the institution. This is important for refining project goals and activities to achieve better outcomes and to share knowledge and experiences so that future projects can be adapted based on lessons learned. There are many ways in which this can be done, including monitoring specific metrics such as energy and water use, carbon emissions, and reductions in waste materials. Projects should also be assessed from the perspectives and experiences of people in prison and staff and adapted based on feedback received.

The **Scottish** Prison Service (SPS) produces yearly climate change reports as part of the Sustainable Scotland Network, a body that supports public sector organizations in Scotland in driving action on climate change and achieving net zero. From 2014 to 2023, the SPS recorded a 24% decrease in its carbon footprint.<sup>310</sup>



### Best Practices

In **New Zealand**, prison authorities are required under the Carbon Neutral Government Programme to measure, verify and report on emissions annually, set progressive emissions reduction targets, and offset any remaining emissions from 2025 onwards to achieve carbon neutrality. Authorities measure emissions across different categories, including direct emission, as well as indirect emissions from imported energy, transportation, and products and services used by the institution.<sup>311</sup>

<sup>309</sup> Ghana Ministry of Lands and Natural Resources, Ghana Prisons Service Commits to making Green Ghana project Successful, 8 June 2022. <https://mlnr.gov.gh/index.php/ghana-prisons-services-commits-to-making-green-ghana-project-successful/>

<sup>310</sup> Sustainable Scotland Network, The Scottish Prison Service Climate Change Report 2022-2023.

<sup>311</sup> Department of Corrections New Zealand, Annual Report 2023. [https://www.corrections.govt.nz/\\_\\_data/assets/pdf\\_file/0007/50578/Annual\\_Report\\_2023\\_v20.pdf](https://www.corrections.govt.nz/__data/assets/pdf_file/0007/50578/Annual_Report_2023_v20.pdf)

The Strategic Guiding Framework for Greening **Kenya's** Justice System recognises monitoring and evaluation as a key component in making the prison system more environmentally sustainable, noting that:

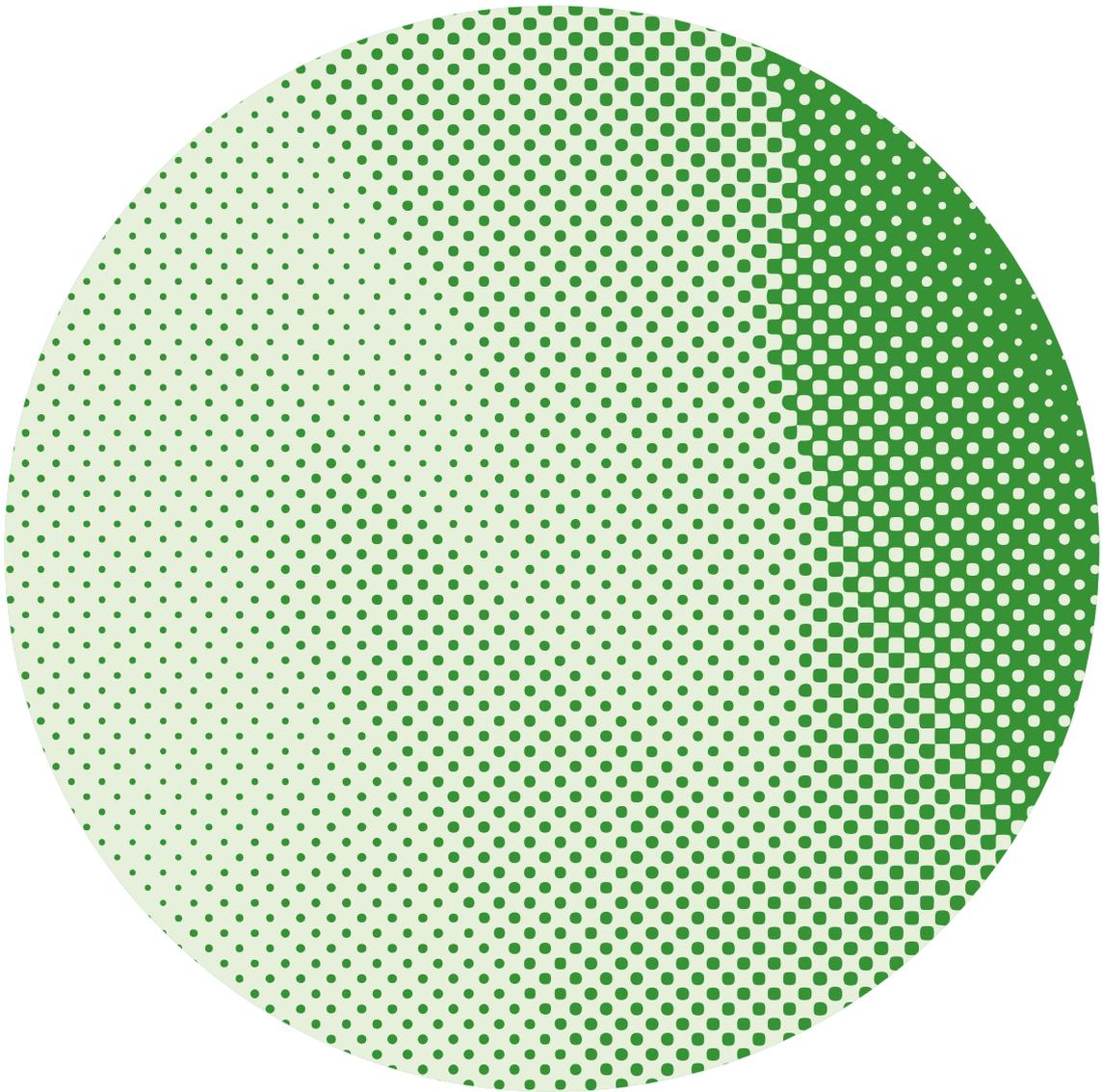
*“Effective monitoring and evaluation are essential for decision-making and successful greening of the justice system. It is vital to track progress, identify challenges and make necessary adjustments. Hence, annual monitoring should be undertaken. This should entail formulating greening indicators, data collection, analysis and reporting.”<sup>312</sup>*

Tracking post-release outcomes for individuals involved in sustainability rehabilitation projects is also valuable. The Washington State sustainability project in the **USA** has highlighted the challenge of monitoring post-release outcomes. However, research conducted between 2018 and 2019 provided data demonstrating low levels of recidivism among participants in its sustainability programmes.<sup>313</sup>

---

<sup>312</sup> National Council on the Administration of Justice, Strategic Guiding Framework for Greening Kenya's Justice System 2024. <https://qr.me-qr.com/mobile/pdf/ac8966de-1075-4a56-a1a2-56cae524a061>

<sup>313</sup> Sustainability in Prisons Project, SPP results, <https://sustainabilityinprisons.org/resources/spp-results/>



## 5. Conclusion

---

It is crucial that prisons are not overlooked in international and national discussions on environmental protection. As self-contained communities, prisons have the potential to lead in sustainable practices, serving as valuable sites for trialling energy efficiency and self-sufficiency projects, and circular economy strategies. By integrating these initiatives, prisons can significantly reduce their environmental footprint while providing valuable insights applicable to broader societal sustainability efforts.

Evidence from existing global projects demonstrates that prisons can be leaders in this field, offering both short- and long-term benefits for all. These include reducing resource consumption, minimizing pollution, and fostering healthier environment for people in prison, staff, and surrounding communities. Additionally, some initiatives yield significant financial savings for prison authorities, which can be redirected towards improving detention conditions or expanding rehabilitation programmes. Lessons learned from sustainability projects in prisons can also be applied or adapted to other public institutions, such as schools, hospitals, and nursing homes, further expanding the impact of these efforts.

Involving people in prison in sustainability initiatives and enabling them to become leaders in this field and custodians of their local environment also teaches community involvement, personal responsibility for both local and global issues, and good citizenship, creating a better future for themselves and others.

It is the responsibility of the justice sector, including prisons, to contribute to the achievement of government targets on climate. It is equally the responsibility of governments to ensure that prisons are included in environmental planning and initiatives aimed at creating more sustainable societies. This applies to both private and government-run prisons. Individuals – such as prison managers, staff, and individuals in prison – can also contribute to environmental efforts, though greater action is needed to ensure that those in prison are encouraged and empowered to do so. There are already some good examples where the justice sector, particularly prisons, are included in national planning to meet SDG targets and national environmental standards. However, there are still many opportunities to strengthen the sector's integration into broader sustainability planning.

Sustainability projects can be initiated in any prison, old or modern, large or small, and can be of any scale, utilizing existing physical and human resources if a budget is not available. It is important to remember that every little bit counts when it comes to protecting the environment and it is better to

do something rather than nothing in all regions and across all sectors. It is also possible to find ways to promote sustainability without compromising security. In fact, such projects can help to enhance security and reduce costs in the long term while creating a more humane, effective and environmentally responsible prison system.

In developing efforts towards more sustainable prisons, authorities must not lose sight of the pressing need to reduce the number of people in prison and improve conditions for those detained. Sustainability initiatives must therefore go hand in hand with strategies to limit the excessive recourse to imprisonment at both pre- and post-trial stages and should be tailored toward improving the health and wellbeing of both people in prison and staff in line with international human rights standards.

It is also crucial to guard against the legitimization of imprisonment through 'greenwashing' and ensure that any green prison initiatives are truly driven by sustainability and broader prison reform goals rather than by marketing purposes, corporate benefit and cost savings alone. Projects which truly have rehabilitation and wellbeing and the protection of the planet at their heart are also those most likely to prove successful.

The framework for building sustainable prison systems contained in this report provides the building blocks that all prisons should follow in their endeavours to make the prison system more environmentally friendly. Following each of the steps will ensure that initiatives are beneficial to the environment as well as to those living and working in prison and the broader community. The roadmap for a more sustainable prison system attached to this report offers a strategic approach to achieving these goals, guiding prisons through practical, phased actions to reduce their environmental impact while fostering a healthier and more rehabilitative environment for all involved.

# ANNEX 1

## Road map for a more sustainable prison system

### Understanding environmentally sustainable prisons

- ▶ A first step in any undertaking to make prisons more sustainable is to have a clear idea of what environmental sustainability means in reality and how this can be best applied to the prison context in practice.

*The UN defines sustainability as “meeting the needs of the present without compromising the ability of future generations to meet their own needs.”<sup>314</sup>*

*The six Rs of sustainability have been defined as:<sup>315</sup>*

- ▶ **Rethink:** Encouraging a shift in mindset towards conscious consumerism and sustainable living.
- ▶ **Refuse:** Empowering people to reject unnecessary products or services that harm the environment.
- ▶ **Reduce:** Focussing on minimizing waste production by using fewer resources and making more efficient use of what is available.
- ▶ **Reuse:** Advocating for using items multiple times, extending their life cycle beyond the single-use mindset.
- ▶ **Repair:** Encouraging fixing broken items instead of discarding them, to lengthen their usability and reduce waste.
- ▶ **Recycle:** Involving processing used materials into new products to prevent waste of potentially useful materials.

<sup>314</sup> The United Nations, Sustainability, <https://www.un.org/en/academic-impact/sustainability>

<sup>315</sup> Practical Action, What are the '6 Rs' of sustainability' <https://practicalaction.org/learning/waste/the-6-rs/>

- ▶ Prison authorities should not be expected to become experts in environmental sustainability methods. They will require guidance from subject matter specialists. Ways to achieve this could include:
  - The provision of national and practical guidance disseminated to all prisons on greening prisons, to include technical knowledge on subjects such as environmentally friendly farming and gardening, green procurement, energy conservation and recycling.
  - Training of key prison staff and people in prison on putting the basic principles of environmental sustainability into practice to embed this knowledge within the system.
  - Partnerships with local subject specialists, universities, community organizations and other sustainability experts to provide guidance on sustainability in different technical areas.
  - Awareness raising within prisons on what environmental sustainability means in practice and how individuals can make a difference.
  - Including external experts to visit prisons to observe the progress of specific projects and advise on the environmental credentials.

## Assessing current environmental impacts

- ▶ Any plans to develop a greener prison system must be based on a clear understanding of the current environmental impact of different facilities in order to determine priority areas for action and realistic targets. It is likely that expert input will be needed for some of these areas. This might include gathering information and data on:
  - Current energy and water consumption and associated costs
  - Levels of greenhouse gas emissions from prison facilities and other operations
  - Levels of waste materials produced and cost of transport/disposal
  - Details of food wastage - types and amounts of food wasted and costs of disposal
  - Vehicle mileage and fuel usage
  - Current procurement practices
  - Farming and gardening techniques in use
  - Amount of food currently produced
  - Current biodiversity in the local area.
- ▶ Assessments of a prisons' ecological footprint should also include the impact of current green programmes to determine if there is room for improvement or need for change.
- ▶ In addition to technical information and data collection, the current environmental impacts of prisons can be explored through interviews with key stakeholders including people in prison and staff members. This can include:

- Energy and water use and needs directly from the service users (e.g. when and how often do people shower)
- How and why resources are wasted and how waste can be reduced or materials could be reused or recycled
- The reasons for food waste and what can be done better
- Journeys undertaken and reasons

## Gaining institutional and community support

- ▶ Sustainability plans and activities need full institutional support at all levels of government and prison leadership and including administrative and operational support. This requires commitments to:
  - Support the development of environmental planning and encourage environmental stewardship amongst prison management and staff
  - Support initiatives with the required financial and human resources and provide appropriate training where needed, including appointing teams or individuals with responsibility for sustainability projects
  - Sustain programs to take into account high staff turnover, fluctuating resources and the movement of people in and of prison.
- ▶ Sustainability projects will be much more successful if they have the support and buy-in of people in prison, staff members and the local community. This can be achieved by:
  - Consulting all relevant stakeholders on what they consider to be the priority areas and most realistically achievable environmental programmes and services inside the prison and within the local community [stakeholder engagement strategy]
  - Communicating about the progress of the projects with all relevant stakeholders and seeking regular feedback on the ideas for improvement
  - Engaging the support of local employers to ensure the relevance of particular projects for the local job market and facilitate rehabilitation
  - Gaining understanding and support from the local community by giving back to the local community what is produced through the projects (e.g. organic vegetables grown using composted food waste)

## Developing realistic plans and goal setting

- ▶ It will be useful to develop national strategies or 'roadmaps' towards sustainable planning and policy making that individual facilities can adapt for the local context but which also link to global sustainability goals.

This can include specific goals that all prisons can work towards. Individual institutions could then also set their own realistic goals so that progress can be monitored. Subject specific goals could include:

- Lowering energy consumption and costs
- Reducing fuel use and numbers of journeys undertaken
- Minimising levels of food waste and reducing spend on purchased goods
- Reducing water usage and leaks
- Lowering levels of waste disposal and associated costs

## Consultation, communication and coordination

- ▶ All sustainability planning should be carried out in close consultation with other relevant agencies and experts to ensure relevance, resourcing, buy-in and cooperation. This could include developing specific cooperation protocols with different agencies, including, for example:
  - Government environmental, energy, health and transport agencies
  - Specialised environmental NGOs, ecologists and other conservation specialists and local educational establishments working in the field of environmental protection
  - Architects, carceral geographers and experts in biophilic and salutogenic design
  - Energy agencies and companies specialised in green energy
  - Technical specialists in renewable energy water and waste management
  - Those currently involved in leading and developing rehabilitation, education and mental health programmes in prisons
  - Potential future local employers

## Prioritizing wellbeing and rehabilitation and promoting safe and healthy environments

- ▶ Sustainability initiatives should also contribute to addressing existing human rights concerns, strengthening human rights protections, advancing rehabilitative goals, and improving the working conditions of prison staff. This can be achieved by developing programmes which:
  - Ensure the physical safety, dignity and decent working conditions of those involved in any green rehabilitation and work programmes
  - Focus on physical and mental wellbeing of both staff and people in prison as a priority for all initiatives
  - Prioritize links to families and communities
  - Incorporate improved conditions of detention in any infrastructural project, ensuring compliance with human rights standards on prison conditions

- Prioritize the principle of 'Do No Harm' in all projects
- Ensure that all projects are designed and implemented in accordance with principles on non-discrimination, fairness and inclusivity and taking into account the needs of different groups of people

## Considering all aspects of prison planning and management

- ▶ While it will take time to ensure that prison operations are fully sustainable and it may only be possible to start with small scale projects focussed on one element of sustainability, it will be important for prison authorities to consider which areas might be a priority for environmental reform now or in the future. Areas for consideration include:
  - Prison siting, design and planning
  - Building, extensions and refurbishment
  - Energy sources and use
  - Prison transport
  - Public procurement
  - Food and catering
  - Farming and gardening
  - Water management
  - Waste management
  - Conservation and biodiversity
  - Rehabilitation programmes

