APRIL 2018

# Greening Peacekeeping: The Environmental Impact of UN Peace Operations

## PROVIDING FOR PEACEKEEPING NO. 17

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IPI
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**Cover Photo:** MINUSMA carries out civilian-military activities for the benefit of the population during Operation Frelena, including distribution of drinking water in Gao, Mali, July 12, 2017. UN Photo/MINUSMA.



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**Suggested Citation:**
Lucile Maertens and Malkit Shoshan, "Greening Peacekeeping: The Environmental Impact of UN Peace Operations," New York: International Peace Institute, April 2018.



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## ACKNOWLEDGEMENTS

The authors would like to warmly thank the UN officials who provided valuable information for this project despite the many important demands on their time. They are especially grateful to those officials who also reviewed the draft study and improved it through their insightful feedback, in particular Sophie Ravier.

Thank you to Arthur Boutellis, Alexandra Novosseloff, Jake Sherman, and Paul Williams both for the opportunity to write this study and for their constructive comments on it. Thanks also go to Madeline Brennan and Albert Trithart for excellent editing and to Annie Schmidt for her great work as graphic designer for this report.

IPI owes a debt of gratitude to all of its donors, who make publications like this one possible. In particular, IPI would like to thank the government of Finland for supporting this project.

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# Abbreviations

| | |
|---|---|
| DFS | UN Department of Field Support |
| DPKO | UN Department of Peacekeeping Operations |
| MINUJUSTH | UN Mission for Justice Support in Haiti |
| MINURSO | UN Mission for the Referendum in Western Sahara |
| MINUSCA | UN Multidimensional Integrated Stabilization Mission in the Central African Republic |
| MINUSMA | UN Multidimensional Integrated Stabilization Mission in Mali |
| MINUSTAH | UN Stabilization Mission in Haiti |
| MONUSCO | UN Organization Stabilization Mission in the Democratic Republic of the Congo |
| OCHA | Office for Coordination of Humanitarian Affairs |
| ODS | Ozone-depleting substances |
| OIOS | Office of Internal Oversight Services |
| QIP | Quick impact project |
| REACT | Rapid Environment and Climate Technical Assistance Facility |
| UNAMI | UN Assistance Mission for Iraq |
| UNAMID | AU/UN African Union Mission in Darfur |
| UNEP | UN Environment Programme |
| UNFICYP | UN Peacekeeping Force in Cyprus |
| UNHCR | UN High Commissioner for Refugees |
| UNIFIL | UN Interim Force in Lebanon |
| UNISFA | UN Interim Security Force in Abyei |
| UNITAR | UN Institute for Training and Research |
| UNMIK | UN Interim Administration Mission in Kosovo |
| UNMIL | UN Mission in Liberia |
| UNMISS | UN Mission in South Sudan |
| UNSOS | UN Support Office in Somalia |

# Executive Summary

UN peacekeepers started paying attention to their environmental impact beginning in the 2000s with the deployment of several new large-scale operations. These missions have drastically more staff and infrastructure than previous ones and are deployed in countries without the basic infrastructure necessary for tasks like waste management. As a result, they import massive amounts of materials and people into the areas where they operate, increasing their environmental footprint. Moreover, these missions are often situated alongside fragile rural and urban communities, exposing wide disparities between these communities and the peacekeepers in their consumption and waste patterns.

Growing attention to potential environmental damage caused by the UN has led to calls for an environmental strategy for UN peace operations. In 2013, the UN Security Council for the first time gave a peacekeeping operation (the UN mission in Mali) a direct mandate to address the environmental consequences of its activities. This came in parallel with measures taken by the Departments for Peacekeeping Operations and Field Support (DPKO/DFS), including the adoption of an Environmental Policy for UN Field Missions in 2009 and the creation of an Environment Section in 2016, which has developed an Environment Strategy. The number of staff dedicated to environmental issues has also increased at headquarters and in the field, and training materials focused on environmental issues have been developed. In addition, a number of small-scale success stories have provided best practices and lessons learned for other missions.

However, peace operations face a number of limits and constraints in implementing environmental policies and strategies. First, these are unevenly implemented among missions due to disparities in terms of staff allocation, budget, equipment, local circumstances, and senior leadership. Second, UN headquarters has had difficulty ensuring oversight of missions and assessing their performance. Third, the UN's organizational culture and member states' preferences restrict the design and operation of missions, particularly in terms of sourcing and procurement. The UN Multidimensional Integrated Stabilization Mission in Mali (MINUSMA) is a good example of how these constraints can manifest themselves on the ground.

Based on this analysis, the reports puts forward a series of recommendations. Several short-term recommendations concern the full implementation of the Environment Strategy and the achievement of its objectives:

- Increase financial and human resources dedicated to the implementation of the Environment Strategy and to planning.
- Implement mandatory training on environmental management for all personnel in missions.
- Systematically collect data on environmental management from all missions and disseminate lessons learned and best practices.
- Use local capacities where feasible.

Due to the difficulty of implementing them, the following recommendations are medium-term targets:

- Continue to reinforce oversight by systematically monitoring performance indicators and fostering data ownership and accountability.
- Extend DFS's partnership with UNEP.
- Advocate for member states to support sustainable environmental management in peace operations.

The final recommendation is long-term:

- Develop comprehensive indicators and an integrated approach to environmental concerns.

# Introduction

In 2010, just nine months after the 7.0 magnitude earthquake that struck Haiti, the mismanagement of wastewater in the UN Stabilization Mission in Haiti's (MINUSTAH) Mirebalais camp triggered a cholera epidemic that killed more than 9,000 people and affected nearly 807,000.[1] In August 2016, Philip Alston, special rapporteur on extreme poverty and human rights, dedicated his annual

1 UN General Assembly, *New Approach to Cholera in Haiti: Report of the Secretary-General*, UN Doc. A/71/895, May 3, 2017, p. 4.

report to the cholera outbreak, stating "the scientific evidence points overwhelmingly to the conclusion that the arrival of Nepalese peacekeepers and the outbreak of cholera are directly linked to one another."[2]

This disastrous case drew attention to the negative effect UN peace operations can have on the surrounding communities and the environment in which they are active and the environmental footprint they can leave. This is despite the Department of Peacekeeping Operations (DPKO) and Department of Field Support's (DFS) 2009 Environmental Policy for UN Field Missions, which was intended to prevent environmental mismanagement. Since the 2000s, UN peace operations have been increasingly aware of environmental challenges, especially as a consequence of their own expansion. Recent transformations in peacekeeping practices and the contexts in which missions operate have also led to more significant environmental impacts. In recent decades, UN peace operations have been deployed on a large scale in hundreds of fragile rural and urban sites. The material footprint of peace operations in these environments includes physical infrastructure such as bases, camps, super-camps, headquarters, logistics hubs, and airfields. These are long-term features that seriously (and often negatively) impact local communities and the environment.[3]

In 2018, the United Nations is conducting fifteen peacekeeping operations worldwide, with total spending of $6.8 billion and a total of 106,338 personnel deployed in the field.[4] In 2016, peacekeeping operations covered an area of over a million square kilometers, and the yearly expenditure on buildings and construction, real estate, and heating and cooling totaled $448,287,372. The various missions included more than 270 UN-constructed bases, super-camps, and outposts and 310 medical clinics.[5]

This report deals with the environmental consequences of UN peace operations. Its main focus is the institutional arrangements and policies currently in place to reduce their environmental footprint and prevent environmental damage.[6] In the first part, we address the challenging contexts in which UN peace operations are active. Their presence results in multiple environmental concerns that have been receiving growing institutional attention.

The second part is dedicated to DFS's environmental approach, including policies and guidelines, staff and units, training material, small-scale projects, and efforts to mainstream environmental management in daily operations.

The third part assesses the challenges DFS faces in the implementation of its Environment Strategy, launched in 2016 and in effect since January 2017. The mainstreaming and fulfillment of the different objectives set up in the strategy are slowed down by disparities among missions that lead to uneven implementation of the environmental policy, difficulty in ensuring oversight from UN headquarters, and the politics of sourcing and procurement.

Drawing on an examination of the UN presence in sub-Saharan Africa, the fourth part uses the UN Multidimensional Integrated Stabilization Mission in Mali (MINUSMA) as a case study to examine the material footprint of UN peace operations from a comprehensive, urban perspective. It draws on practical and analytical expertise in architecture, urbanism, anthropology, landscaping, economics, military engineering, and policy gathered from workshops, field trips, and design exercises.

Based on this analysis, the fifth part suggests a series of recommendations to improve current practices and prevent short- and long-term environ-

2 UN General Assembly, *Report of the Special Rapporteur on Extreme Poverty and Human Rights*, advance unedited version, UN Doc. A/71/40823, August 26, 2016, p. 4.

3 Malkit Shoshan, *BLUE: The Architecture of UN Peacekeeping*, Dutch entry at the 15th International Architecture Exhibition, May 2016.

4 See UN Peacekeeping, "Peacekeeping Operations Fact Sheet," December 31, 2017, available at https://peacekeeping.un.org/sites/default/files/pk_fact_sheet_dec_17.pdf .

5 See UN Procurement Division, "Statistics," available at https://www.un.org/Depts/ptd/statistics/2016 ; and Shoshan, *BLUE: The Architecture of UN Peacekeeping*.

6 The paper relies on a thorough analysis of UN publications and gray literature, as well as on data collected through interviews and observations as part of an independent research project in political science. See Lucile Maertens, "From Green to Blue: Securitization of the Environment within the United Nations" (original title in French: "Quand le Bleu passe au vert: La sécurisation de l'environnement à l'ONU") (PhD diss., Sciences Po Paris and University of Geneva, 2015). The spatial, socio-economic and urban aspects and the case study on Mali draws on broad practical and analytical expertise in architecture, urbanism, anthropology, landscaping, economics, military engineering, and policy gathered through workshops, field trips, and design exercises in part of the super-camp in Gao. See Malkit Shoshan and Jane Szita, "Reimagining the Peacekeeping Mission: Legacy Scenarios for Camp Castor," Het Nieuwe Instituut, January 2015, available at https://drones-honeycombs.hetnieuweinstituut.nl/sites/default/files/workshop_report._gao_legacy.pdf ; and the publication "BLUE: Architecture of UN Peacekeeping Missions," *Archis*, 2016, pp. 1-48.

mental damage in the context of UN peace operations. Differentiating between short-, medium-, and long-term recommendations, it suggests how to strengthen financial and human resources dedicated to addressing environmental issues in missions, mainstream eco-friendly practices through training and best practices, advocate for stronger oversight, carefully build local capacity through local sourcing, and improve current indicators. A UN presence in fragile and conflict-prone areas should not be a source of stress but should improve local environmental sustainability and build resilience, especially since such actions are inexorably linked to conflict prevention.[7]

# Challenging Environments

## GROWING INSTITUTIONAL ATTENTION

In the 1960s and 1970s, major environmental incidents and concerns about their effects on human health brought ecological issues onto the international agenda. Two decades after the First Earth Summit in Stockholm, the 1992 UN Conference on Environment and Development in Rio de Janeiro led to the adoption of three significant international treaties (on climate change, biodiversity, and desertification)[8] and international recognition of the concept of sustainable development (elaborated in the 1987 Brundtland Report). In light of growing environmental concerns at the international level, the UN Advance Mission in Cambodia (UNAMIC, 1991–1992) marked the beginning of UN peacekeepers' concern with natural resources. As far as environmental issues are concerned, the mission's main focus was the role of timber in financing the conflict.[9]

UN peacekeepers only really started to pay attention to their own environmental impact beginning in the 2000s. The UN Secretariat realized the environmental challenge of peace operations around 2004 and 2005, with the deployment of new large-scale operations in Darfur (2004–present), Haiti (2004–2017), Sudan/South Sudan (2005–present), and Chad/the Central African Republic (2007–2010).[10] The number of staff and amount of infrastructure drastically increased in these missions in comparison with previous ones. Moreover, these peace operations were deployed in countries without basic infrastructure, which is necessary for tasks like waste management.

This increasing attention on environmental concerns was part of a global movement in the field of humanitarian action. The UN High Commissioner for Refugees (UNHCR) began paying attention to the environmental impact of its activities within and outside of its refugee camps from the late 1980s, and especially after the 1992 Rio Summit.[11] Humanitarian actors more strongly acknowledged the issue in the 2005 Humanitarian Reform Agenda, which introduced the cluster approach. Because of its crosscutting dimension, the environment was not institutionalized as a separate cluster, but a number of key documents and guidelines recognized the importance of environmental concerns in international interventions.

In addition, the Joint UNEP/Office for the Coordination of Humanitarian Affairs (OCHA) Environmental Unit has also worked "to promote that environmental issues are an integral part of all elements of humanitarian response.… This means that environmental concerns are addressed and considered in needs assessment and analysis, strategic response planning, resource mobilization, performance monitoring and evaluation."[12] Even though the unit still indicated in its 2014 study that there was an urgent need to systematically address a range of issues related to leadership and accountability, there is growing interest in addressing the environmental impacts of humanitarian action, including from governments.[13] In the outcome declaration of the 2012 Earth Summit, UN member states "call[ed] upon the United Nations system to

7 UN Secretary-General, "Priorities: Prevention," available at https://www.un.org/sg/en/priorities/prevention.shtml .

8 Hayley Stevenson, *Global Environmental Politics: Problems, Policy and Practice* (Cambridge, UK: Cambridge University Press (2017), p. 123.

9 UNEP, *Greening the Blue Helmets: Environment, Natural Resources and UN Peacekeeping Operations*, 2012, p. 43, available at www.un.org/en/peacekeeping/publications/UNEP_greening_blue_helmets.pdf .

10 Lucile Maertens, "Quand les Casques bleus passent au vert: Environnementalisation des activités de maintien de la paix de l'ONU," Études internationales 47, no. 1 (2016).

11 Lucile Maertens, "Le HCR et l'appropriation progressive de l'agenda environnemental," in *Mobilité humaine et environnement: Du global au local*, Christel Cournil and Chloé Vlassopoulos, eds. (Paris: Éditions Quæ, 2015).

12 See OCHA, "Environmental Emergencies," available at www.unocha.org/themes/environmental-emergencies .

13 Joint UNEP/OCHA Environment Unit, *Environment and Humanitarian Action: Increasing Effectiveness, Sustainability and Accountability*, August 2014, available at https://www.unocha.org/sites/unocha/files/EHA%20Study%20webfinal_1.pdf .

improve the management of facilities and operations, by taking into account sustainable development practices."[14]

Concerns about the environmental impact of UN peace operations also echo a growing institutional attention to the environmental footprint of the UN system. On June 5, 2007, Secretary-General Ban Ki-moon publicly requested that UN institutions lead by example and "go green." The UN Climate Neutral Strategy was approved in October 2007 by the Chief Executives Board.[15] As a result of this decision, the "Greening the Blue" program was launched to fulfill three commitments: to measure, to reduce, and to offset when feasible. Heads of agencies committed to expanding measurement of their environmental impact for the Greening the Blue annual reports by adding data on waste management by 2016, on the use of drinking water resources by 2018, and on staff training by 2019. Although the program is not compulsory, since 2009, the UN has presented an annual report on its environmental footprint and efforts to reduce it: sixty-seven UN entities participated in the calculation of UN carbon emissions for the 2017 edition, and fifty-six provided data on waste management.[16]

In parallel, the UN Environmental Management Group, established in 2001, has sought to gather all UN programs, funds, and agencies to enhance "UN system-wide collaboration and coherent responses on environmental matters."[17] After participating in the group's meetings since 2008, DFS's proactive request to join the group was accepted.

It is in the context of these efforts that UNEP produced a report dedicated to UN peace operations in 2012. This report, entitled *Greening the Blue Helmets: Environment, Natural Resources and UN Peacekeeping Operations*, was developed in close cooperation with DFS and DPKO. The report was divided into two parts: the first dealt with the environmental footprint of operations, while the second touched on natural resources, conflicts, and peacekeeping. The first part proposed evaluating the implementation of the 2009 Environmental Policy and listed "good practices" for energy efficiency and other eco-friendly practices.[18] The report also emphasized the need for more action at UN headquarters and in field missions.

Based on this study, UNEP developed an online training course on the environment and peacekeeping in partnership with the UN Institute for Training and Research (UNITAR) and the International Institute for Sustainable Development (IISD), and with the support of DPKO and DFS. It also intended to set up a five-year partnership with DFS to facilitate the implementation of the 2009 Environmental Policy. With Under-Secretary-General for Field Support Atul Khare's strong commitment to address these issues, in 2016, DFS and UNEP established a project for UNEP to provide technical assistance to DFS.[19]

UNEP's support for addressing the environmental impact of peacekeeping was further strengthened by the 2030 Agenda for Sustainable Development, adopted in September 2015, and the Paris Agreement on climate change, adopted in December 2015. These agreements set goals and targets for all countries, further incentivizing the UN to improve environmental management of its activities and fully implement the "do no harm" principle.

## ENVIRONMENTAL CONCERNS AND ISSUES AT STAKE FOR UN PEACE OPERATIONS

International relations researcher Kai Kenkel described the UN's transition to larger multidimensional missions mentioned earlier as advancing "from the thin blue line to painting a country blue."[20] Although he was referring to the expanding scope of peace operations at large and the broadening tasks of peacekeepers, this shift is

14 UN General Assembly Resolution 66/288, *The Future We Want* (July 27, 2012), UN Doc. A/RES/66/288, September 11, 2012, para. 96.

15 Lucile Maertens and Marieke Louis, "Quand les organisations internationales se mettent au vert: Acteurs, instruments et effets de l'appropriation de la question environnementale," *Études internationales* 47, no. 1 (2016).

16 UNEP, *Greening the Blue Report 2017: The UN System's Environmental Footprint and Efforts to Reduce It*, 2017, available at www.greeningtheblue.org/resources/climate-neutrality .

17 See http://unemg.org/ .

18 UNEP, *Greening the Blue Helmets*.

19 UN Field Support, *DFS Environment Strategy*, "Executive Summary," April 2017, p. 1, available at http://www.un.org/en/peacekeeping/publications/UNDFS_Environment_Strategy_ExecSum_vF.pdf .

20 Kai Michael Kenkel, "Five Generations of Peace Operations: From the 'Thin Blue Line' to 'Painting a Country Blue,'" *Revista Brasileira de Política Internacional* 56, no. 1 (2013).

also reflected in the spatial manifestation and footprint of peace operations. More bases and headquarters had to be constructed locally to accommodate the growing numbers of peacekeepers. These new facilities were erected in various urban and rural settings, including alongside local institutions such as government buildings and administrative offices.

These physical changes have increased the UN's environmental footprint. The growing demand resulting from a mission's arrival challenges the capacity of local infrastructure, which is usually weak and often already overwhelmed. At the same time, major supply routes can be hard for missions to access, as they often operate in hard-to-reach areas and in landlocked countries.[21] This, combined with stresses such as protracted conflicts, long periods of drought, and rapid population growth, as well as a lack of local expertise, result in a massive influx of materials and know-how into peacekeeping areas.[22] According to data collected in 2016, field missions were responsible for more than half of the total greenhouse gas emissions of the entire UN system (see Tables 1 and 2).[23]

Moreover, UN peace operations are often deployed in fragile urban and rural environments. They unfold on a large scale in hundreds of cities, towns, and villages around the world, becoming long-term features of the local environment. Military bases, camps, super-camps, airfields, headquarters, and logistics hubs are planned, constructed, and deployed by the UN inside and next to populated areas. For example, in 2016, UN peace operations were present in more than 170 municipalities in Africa, with a combined population of 31 million.[24] These inhabited areas are often

Table 1. UN field missions' greenhouse gas emissions in 2016[25]

| | Number of personnel (#) | Total emissions (tCO2eq) | Per capita emissions (tCO2eq/ personnel) | Share of total emissions (%) | | | Facilities-related emissions intensity (kgCO2eq/m2) |
|---|---|---|---|---|---|---|---|
| | | | | Air travel | Other travel | Facilities | |
| Field missions | 124,683 | 1,051,771 | 8.44 | 32 | 14 | 54 | 377.94 |
| UN system | 264,221 | 1,896,199 | 7.18 | 42 | 12 | 46 | 104.81 |

Table 2. UN field missions' waste in 2016[26]

| | Waste per capita (kg/person/ annum) | Reused/ recycled/ composted/ recovered (%) | Incinerated closed (%) | Incinerated open (%) | Landfilled (%) | Controlled disposal (%) | Other (%) |
|---|---|---|---|---|---|---|---|
| Field missions | 677 | 25 | 9 | 11 | 9 | 33 | 13 |
| Total (UN-wide) | 554 | 30 | 10 | 7 | 11 | 30 | 12 |

21 In November 2017, 66 percent of peacekeeping personnel were working in landlocked or hard-to-reach areas. UN Field Support, *DFS Environment Strategy*, "Executive Summary," November 2017 p. 3, available at https://peacekeeping.un.org/sites/default/files/171116_dfs_exec_summary_environment_0.pdf .

22 Shoshan, *BLUE: The Architecture of UN Peacekeeping*, pp. 6–17.

23 This is the latest available data, from the UN's annual measurement in 2017. UNEP, *Greening the Blue Report 2017*.

24 Shoshan, *BLUE: The Architecture of UN Peacekeeping*, pp. 6–17. See also UN Geospatial Information Section website www.un.org/Depts/Cartographic/english/htmain.htm .

25 Field missions refer to peacekeeping operations, special political missions, and support missions. These figures include emissions resulting from the use of armored vehicles. They do not include emissions from freight, but DFS is currently in discussions to see if it will be possible to include contractors' emissions in the future. UNEP, *Greening the Blue Report 2017*.

26 This first inventory has been completed without the participation of all missions. Proxies have been used to assess the average waste per capita. Ibid.

poorly planned and built in zones exposed to natural hazards, making them vulnerable to droughts and floods. Such pressures intensify with the effects of climate change and rapid population growth. In rural areas, too, peace operations often intervene in fragile environments threatened by desertification, over-exploitation of natural resources, and climate variability.

Yet despite these challenges, peace operations are driven by political and security considerations rather than logistical or environmental ones. Mission personnel often have little regard for the local context and are poorly trained in environmental and urban management. Furthermore, peacekeeping operations increasingly intervene in multidimensional conflict settings that lead them to militarize and to fortify their bases, further expanding their physical footprint and isolating them from the local context. Missions operate as self-sustaining islands, allowing peacekeepers direct access to resources such as water, electricity, food, and medical services.[27]

As a result of these emerging problems, DFS and DPKO are receiving a growing number of requests to address environmental issues. Such concerns have also been highlighted in the debriefing reports of environmental officers, the UN personnel in charge of environmental issues within DFS and in field missions. These reports have emphasized both the growing environmental footprint of missions and the potential negative effects on missions' mandates. For example, a former environmental officer in the UN Stabilization Mission in the Democratic Republic of the Congo (MONUSCO) emphasized the severe risks to the organization's image if it does not adequately manage its environmental impact.[28]

The UN is mainly interested in the ecological impact of its peace operations due its reputation and its relationship with local populations. Indeed, UN peacekeeping operations often face criticism from host countries, generally for two main reasons. First, their waste and wastewater management is under scrutiny, especially since the cholera outbreak in Haiti. There are often extreme differences between UN bases and local populations in terms of consumption and waste production patterns. For example, the average Malian generates 237.3 kilograms of waste per year, while a UN peacekeeper produces 677 kilograms per year.[29] In other words, a peacekeeper produces about three times more waste than a Malian, which can significantly influence the local environment. It also means that a mission of 15,000 peacekeepers produces about 11,000 tons of solid waste a year, not including waste resulting from the use of ammunition, the development and changing state of the land used by the UN bases, water use, and emissions.

Second, peacekeepers are often blamed for their use of resources. For example, the UN–African Union Mission in Darfur (UNAMID) and humanitarian actors dramatically increased demand for water and wood in the region, leading to deforestation, which became "a source of tension with local communities."[30] In fragile environments, resources are often scarce, and governance systems may be weak and unresponsive to local needs. This scarcity of and unequal access to resources and land often lie at the very center of the conflicts UN peacekeepers are mandated to manage. The deployment and presence of UN peace operations put stress on and obstruct local ecosystems, leaving the surrounding communities to feel the burden of sharing their limited resources with the peacekeepers.[31]

If UN missions are not environmentally responsible, they face three main consequences. First, the ecological degradation resulting from UN activities affects their reception by local communities and jeopardizes the organization's legitimacy. Second, environmental damage caused by UN missions has a safety and security dimension, since it can be a source of tension between the UN and the host community, as well as within local communities, which can hamper the implementation of the

27 Shoshan and Szita, "Reimagining the Peacekeeping Mission."

28 Maertens, "Quand les Casques bleus passent au vert," pp. 61–62.

29 See Global Footprint Network, available at http://data.footprintnetwork.org/#/compareCountries?type=EFCpc&cn=undefined&yr=2013 ; UNEP *Greening the Blue Report 2017: The UN System's Environmental Footprint and Efforts to Reduce It*, 2016, available at http://www.greeningtheblue.org/sites/default/files/Greening%20the%20Blue%20report%202017%20-%20Brochure%20(web%20-%20low%20res).pdf .

30 UNEP, *Greening the Blue Helmets*, p. 21.

31 Shoshan and Szita, "Reimagining the Peacekeeping Mission."

overall mandate of the mission. Third, ecological damage can have long-term consequences for ecosystems and communities, even years after a mission closes down, from waste resulting from the use of plastic bottles, to the depletion of subterranean water reserves in arid areas, to the overall carbon footprint of missions due to air travel and transport.

## DEBATES OVER ENVIRONMENTAL ISSUES AT THE SECURITY COUNCIL

The Security Council has regularly discussed environmental issues since the late 1990s. It has repeatedly examined the link between the environment and conflict, first approaching this issue through the lens of the exploitation of natural resources. It adopted a series of sanctions on certain commodities, such as timber and diamonds, and mandated peacekeepers to directly or indirectly address natural resources (e.g., supervision of the logging moratorium in Cambodia, support for policies to prevent illegal trade in natural resources in the Democratic Republic of the Congo, oversight of oil infrastructure in Sudan and South Sudan). In 2005, it adopted Resolution 1625, which recognized the potential contribution of high-value natural resources "to the outbreak, escalation or continuation of armed conflict."[32] In 2007, UN member states agreed on a presidential statement concluding the first debate on natural resources and conflicts. In this statement, they highlighted the role of UN peacekeeping operations in the restoration of natural resource management systems.[33] According to UNEP's 2012 report, member states also requested several missions to invest in issues related to natural resources, including the missions in Angola, Cambodia, Côte d'Ivoire, the Democratic Republic of the Congo, Iraq-Kuwait, Liberia, Sierra Leone, Sudan, Abyei, Darfur, South Sudan, and Timor-Leste.[34] In 2013, natural resources were again on the agenda, but member states did not reach consensus for a general resolution on natural resources and conflict.[35] As a result, instead of a systematic approach, member states have opted for a case-by-case approach to environmental issues.

However, putting climate change on the agenda of the Security Council is extremely controversial. Strong divisions have emerged among Security Council members, most clearly in 2007 and 2011, when they discussed the security implications of climate change. They have also mainly only considered these issues during informal meetings (Arria formula) or indirectly as a topic related to the main discussion (e.g., on water and peace, small island developing states, or even conflict prevention). Nevertheless, an increasing number of states, both from the Global North and the Global South, are advocating for greater consideration of climate threats.[36]

Regarding UN peace operations' environmental footprint, the Security Council has been slow in taking the issue on board. As discussed later, some member states have been vocally opposed to stricter policies and environmental standards for peacekeeping operations. As a result, they have included environmental concerns in peace operations' mandates only since 2013 (and still not systematically), starting with MINUSMA.

However, besides member states' support in other arenas—the General Assembly's Special Committee on Peacekeeping Operations (C34), Advisory Committee on Administrative and Budgetary Questions, and Fifth Committee—two recent initiatives in the Security Council also show growing interest in environmental matters. Despite much debate among member states, the Security Council released a press statement on the environmental management of peacekeeping operations in December 2017.[37] Even though press statements are not legally binding, they can create incentives and conditions for further discussions. In addition, a "Group of Friends Leading on Environmental Management in the Field," co-chaired by

32 UN Security Council Resolution 1625 (September 14, 2005), UN Doc. S/RES/1625.

33 UN Security Council, *Statement by the President of the Security Council*, UN Doc. S/PRST/2007/22, June 25, 2007.

34 UNEP, *Greening the Blue Helmets*, pp. 84–99. See also Philippe Le Billon, "Bankrupting Peace Spoilers: Can Peacekeepers Curtail Belligerents' Access to Resource Revenues?," in *High-Value Natural Resources and Peacebuilding*, Päivi Lujala and Siri Aas Rustad, eds. (London: Earthscan, 2012).

35 UN Security Council, 6982nd Meeting, UN Doc. S/PV.6982, June 19, 2003.

36 Lucile Maertens, "Le changement climatique en débat au Conseil de sécurité de l'ONU," *Revue internationale et stratégique* 1, no. 109 (2018).

37 This text was initially meant to be a presidential statement, but member states were unable to reach consensus. The text was therefore "downgraded" to a press statement.

Bangladesh and Italy, has recently been created to advocate for further implementation of DFS's Environment Strategy for UN peace operations.

## UN Peace Operations' Environmental Approach

Growing attention to potential environmental damage caused by the UN has led to calls for the conceptualization and implementation of an environmental strategy for UN peace operations. This includes environmental policies and guidelines produced since the late 2000s, DFS's Environment Strategy, training material and staff dedicated to environmental affairs, and small-scale projects that can highlight best practices.

### ENVIRONMENTAL POLICY AND GUIDELINES

On April 25, 2013, in the resolution that established the new peacekeeping operation in Mali (MINUSMA), the UN Security Council called for an assessment of the effects of the mission on the environment, requesting "the Secretary-General to consider the environmental impacts of the operations of MINUSMA when fulfilling its mandated tasks and, in this context, encouraging MINUSMA to manage them, as appropriate."[38] For the first time, a UN peacekeeping operation received a direct mandate to address the environmental consequences of its activities. Since then, the Security Council has also requested four other missions to consider and manage their environmental footprint: UNAMID (in 2013), the UN Support Office in Somalia (UNSOS, in 2015), MONUSCO, and MINUSCA (both in 2017).

These mandates came in parallel with a series of measures DPKO and DFS have taken to reduce the environmental impacts of their operations (see Figure 1). In 2009, DPKO and DFS adopted their Environmental Policy for UN Field Missions.[39] Various previous initiatives prepared them for the adoption of this policy, which was initially drafted with the support of UNEP. According to a former staff member of DPKO, one position dedicated to the environment was first created within the Engineering Section at UN headquarters to suggest guidelines and environmental standards.[40] However, standards had yet to be officially institutionalized. He also mentioned a series of interventions from 2004 to 2005 focusing on sanitary conditions and the treatment of wastewater in field missions. In line with the secretary-general's push toward a climate neutral UN, a first draft of the Environmental Policy was sent to all DPKO and DFS senior staff in 2007. It took two years before it was officially adopted, following questions over the legal obligations it would commit the UN to.

Concentrating mostly on the practices and behaviors of UN peacekeepers, the 2009 Environmental Policy deals with the following topics: solid and hazardous waste; energy; water and wastewater management; wild animals and plants; and cultural and historic sites. Effective since June 1, 2009, it requires each operation to establish an environmental policy—an environmental baseline study, an environmental action plan, and an emergency preparedness plan, with objectives and control measures—and to appoint an environmental officer. It also requires all employees to follow its recommendations as well as those of the environmental guidelines that accompany it, which are available to UN staff on the DPKO/DFS intranet. According to DPKO and DFS, the policy both aims to reduce environmental impact and to improve the health and safety of UN staff and local communities.

Subsequently, the secretary-general brought up the environmental footprint of peace operations in his 2010 report on the Global Field Support Strategy.[41] On several occasions since 2011, member states in the General Assembly (the Second and Fifth Committees and the C34)[42] and in the Security Council have requested the implementation of sound environmental practices, promoted the mitigation of the environmental impact of UN peacekeeping operations, and mandated missions to strengthen their efforts in these areas.[43] For

38 UN Security Council Resolution 2100 (April 25, 2013), UN Doc. S/RES/2100.

39 UN DPKO and DFS, *Environmental Policy for UN Field Missions*, UN Doc. PK/G/2009.06, May 31, 2009.

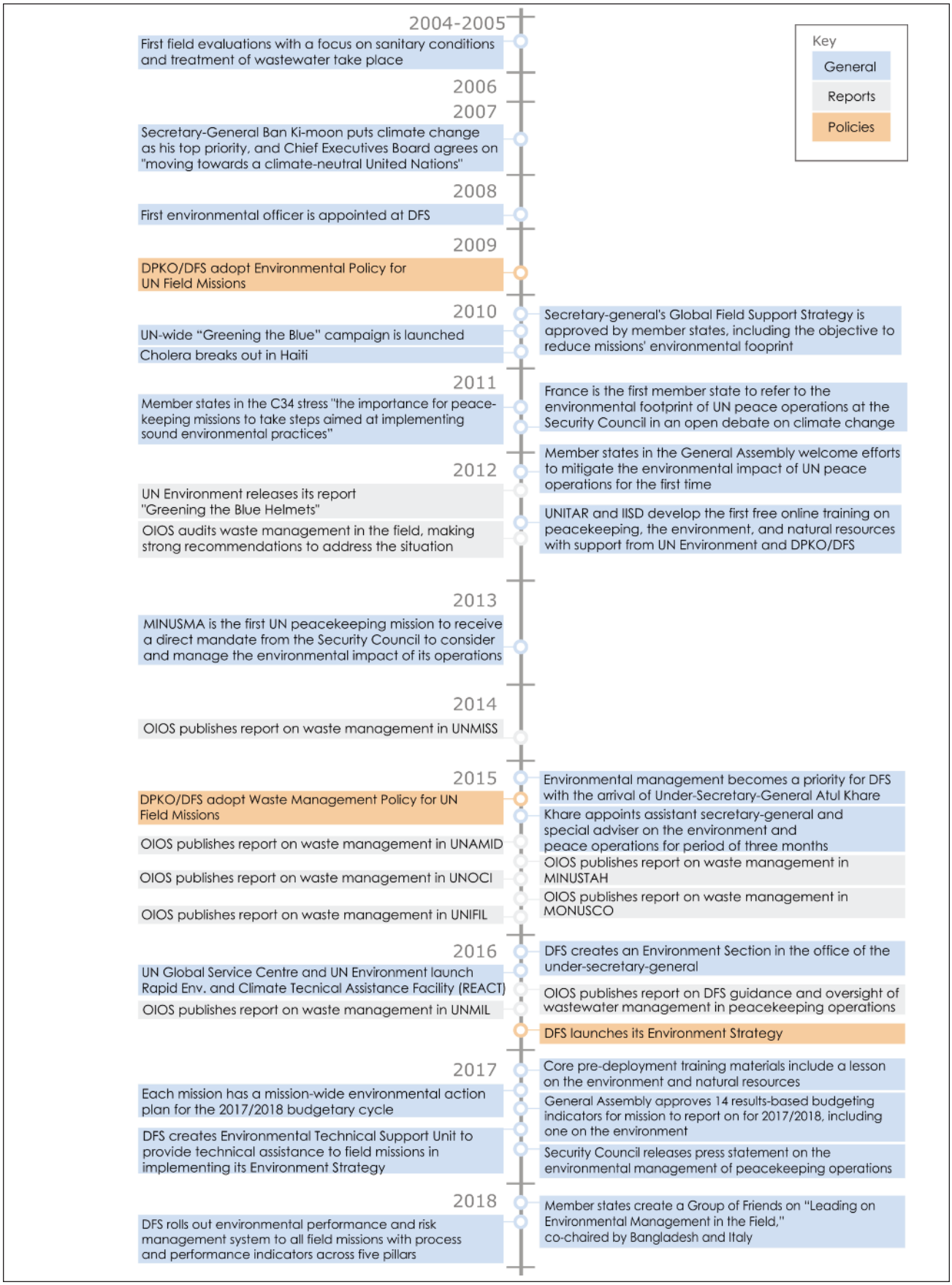
40 Interview with former DPKO official, New York, February 2013.

41 UN General Assembly, *Global Field Support Strategy: Report of the Secretary-General*, UN Doc. A/64/633, January 26, 2010.

42 Support in the Fifth Committee is especially important since its decisions provide the basis for peacekeeping budgets approved in the General Assembly.

43 Maertens, "Quand les Casques bleus passent au vert," p. 66.

## Figure 1. UN peace operations and the environment: Stepping stones



instance, the Security Council's 2017 press statement on the environmental management of peacekeeping operations states:

> The members of the Security Council were cognizant of the possible environmental impact of peacekeeping operations mandated by the Security Council. They underscored the importance that peacekeeping operations endeavor to minimize their impact on the sustainability of the ecosystems where they are deployed, based on sound consideration of the risks, benefits and costs.

They acknowledged that "the modalities in which peacekeeping operations interact with the environment where they are deployed may contribute to the effective and efficient delivery of their mandates." They also "underlined the importance to address comprehensively the environmental impact of peacekeeping operations, in close coordination with the relevant parties involved," being mindful of the environmental goals set out in global agreements such as the Paris Agreement on climate change.[44]

Since 2015, environmental management has become a priority for DFS. That year, it adopted a Waste Management Policy for UN Field Missions. At the beginning of 2016, an Environment Section dedicated to environmental management was created in the Office of the Under-Secretary-General for Field Support. The section developed DFS's Environment Strategy in consultation "with missions, HQ actors and relevant partners."[45] Officially released in November 2016, the strategy is divided into two phases. The first focuses on setting baseline data for June 2020. The second aspires to the following vision for June 2023: "responsible missions that achieve maximum efficiency in their use of natural resources and operate at a minimum risk to people, societies and ecosystems; contributing to a positive impact on these whenever possible."[46] It provides a precise timetable (see Figure 2) and performance indicators for five pillars: energy, water and wastewater, solid waste, wider impact, and the introduction of an environmental management system.[47]

To implement the Environment Strategy, missions use a standard template to develop their environmental action plan through data collection and budget planning. By November 2017, each mission had a mission-wide environmental action plan for the 2017/2018 budgetary cycle.[48] For the first time, member states also agreed on a set of fourteen key performance indicators for all missions, including one indicator on environmental issues. By setting common indicators for all missions, this decision supports the creation of an environmental performance management system. DFS's Environment Section is also developing a methodology to assess the wider environmental impact and is working with missions to monitor waste and collect reliable data on energy and water consumption to provide more accurate baseline data.

Environmental management policies are constantly being updated to meet environmental challenges while being disseminated in key documents, such as in specific manuals like the forthcoming revised Liquidation Manual.[49] The Environment Strategy is considered to be "a living document, updated as progress is made and approaches evolve."[50] DFS's Environment Section, current missions, and the UN Global Service Centre in Brindisi are working on its implementation, with DFS recognizing that there is still "a long way to go."[51]

## ENVIRONMENTAL STAFF IN HEADQUARTERS AND MISSIONS AND TECHNICAL ASSISTANCE

The implementation of environmental policies relies on both human and financial resources. Since 2009, the number of staff dedicated to environ-

44 UN Security Council, *Press Statement on Environmental Management of Peacekeeping Operations*, UN Doc. SC/13134-ENV/DEV/1830-PKO/700, December 21, 2017.

45 UN Field Support, *DFS Environment Strategy*, "Executive Summary," April 2017, p. 1.

46 Ibid.

47 Like in the Environmental Policy, this pillar includes issues around the protection of cultural heritage. For more information, see Mathilde Leloup, "La Résolution 2011 ou l'inscription du patrimoine culturel au mandat d'une opération de paix," Réseau de recherche sur les opérations de paix, May 25, 2016, available at www.operationspaix.net/97-dossier-du-rop-la-resolution-2100-ou-linscription-du-patrimoine-culturel-au-mandat-dune-operation-de-paix.html .

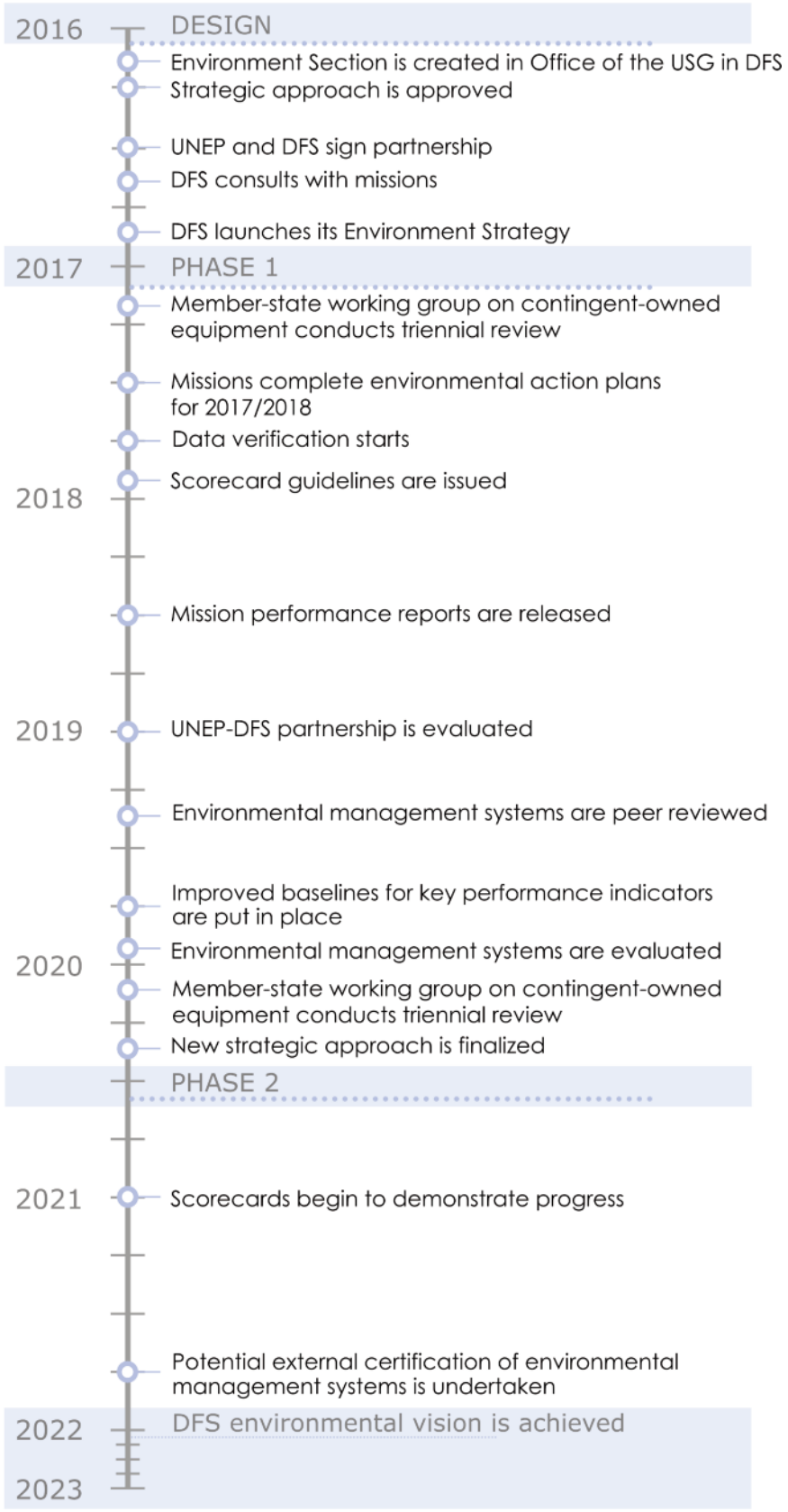
48 UN Field Support, *Progress So Far: DFS Environment Strategy*, November 2017, p. 1, available at https://peacekeeping.un.org/sites/default/files/171116_progress_so_far.pdf .

49 Ibid.

50 UN Field Support, *DFS Environment Strategy*, "Executive Summary," November 2017, p. 1.

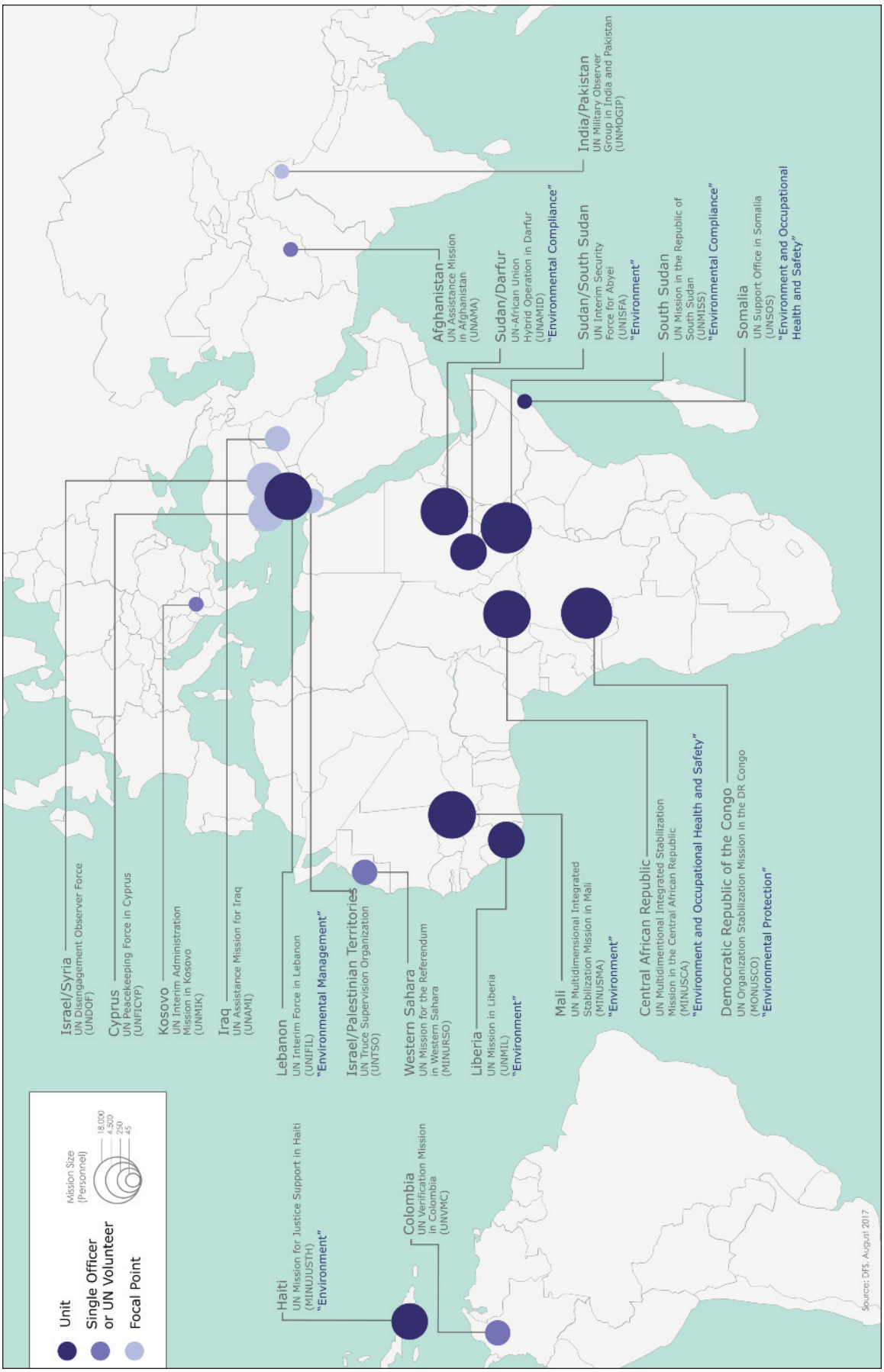
51 UN Field Support, *DFS Environment Strategy*, "Executive Summary," April 2017, p. 1.

## Figure 2. Timeline for DFS's Environment Strategy




Source: DFS, Environment Strategy, November 2017.

Figure 3. UN peace operations with environmental capacities



mental issues has increased both at headquarters and in missions, including with the support of external technical assistance.

Environmental officers, as key actors in raising awareness, support the development of UN peace operations' environmental practices. In parallel with the creation of the 2009 Environmental Policy, in the late 2000s, DFS appointed an environmental officer in charge of coordinating efforts to reduce the environmental footprint of UN peacekeeping operations and raise broader awareness of the environment among peacekeepers. Nominated before the adoption of the Environmental Policy, the environmental officer position was integrated into DFS's Logistics Support Division (first within the Engineering Section, then in the Office of the Director), with approval by the General Assembly.

Several activities were assigned to the officer before the creation of the entire Environment Section in 2016: (1) management of the information to be disseminated on the intranet and on the website; (2) circulation of the Environmental Policy within headquarters and dissemination of environmental guidelines and publications; (3) presentation of the results of the implementation of the Environmental Policy to member states; and (4) management of a community of practice, established to facilitate exchanges among staff and environmental officers serving in operations.[52]

Human resources are unevenly shared among missions (see Figure 3). As of January 2018, ten missions had a unit entirely dedicated to environmental issues, under different labels: "Environment and Occupational Health and Safety" (MINUSCA, UNSOS), "Environment" (MINUJUSTH, MINUSMA, UNISFA, UNMIL), "Environmental Compliance" (UNAMID, UNMISS), "Environmental Protection" (MONUSCO), and "Environmental Management" (UNIFIL). Most of the units report directly to the director or chief of mission support. Each mission with more than 1,000 uniformed personnel has an environmental unit, and the six missions with more than 10,000 uniformed personnel have at least two dedicated professional staff (at P3/P4 level or national professional officers). The units also include UN volunteers (in some cases, like MINURSO, UNAMA and UNVMC, the UN volunteer is the only staff member working on environmental management).[53] DFS's Environment Section also suggests strengthening the capacity and expertise of engineering staff, who are distinct from environmental officers,[54] and recruiting waste management officers. In headquarters, as of early 2018, the Environment Section had three professional staff (one P5, one P4, and one P3) and one general staff member.

In addition to monitoring the implementation of and disseminating the Environmental Policy, environmental officers at headquarters and in the field have two additional functions. First, they symbolically demonstrate that DFS takes the environmental impact of its operations seriously. Second, they ensure the visibility of the mission's environmental footprint to senior management and facilitate the implementation of environmental projects in the field: they conduct inspections, promote mainstreaming environmental policies into operations conducted by missions, advise other sections, and organize training and awareness-raising campaigns for field personnel.[55] They also form a network of experts on peace operations and environmental practices and interact in the working groups' "set up to develop detailed operational plans across each of the five pillars" of the Environment Strategy. These working groups bring together mission staff through voluntary monthly video conferences, in which an average of eleven missions participate.[56]

To supplement UN staff in missions, technical assistance is provided by three means. First, DFS's Environment Section provides policy-related information to all missions, including a series of advisory notes addressing waste management and disposal issues (see Figure 4).[57] Second, since July 2017, the Global Service Centre in Brindisi has had

52 Maertens, "Quand les Casques bleus passent au vert," p. 64.

53 Interviews with DFS, New York, March 2018.

54 Interview with officials from DFS Environment Section, New York, March 2018.

55 Ibid.

56 UN Field Support, *DFS Environment Strategy*, "Executive Summary," November 2017, p. 1.

57 UN Field Support, *Progress So Far: DFS Environment Strategy*, "Executive Summary," November 2017, p. 1.

an Environmental Technical Support Unit with a team of engineers to support missions in technically implementing the Environment Strategy. Third, in June 2016, DFS and UNEP launched the Rapid Environment and Climate Technical Assistance Facility (REACT), which recruited eight professionals in engineering and the environment to provide technical assistance to headquarters and missions. As of November 2017, it had conducted fifteen on-the-ground visits and had provided technical support on several occasions (see Table 3).[58] For instance, together with the Global Service Centre, the REACT partnership brought technical assistance on hazardous waste disposal to the UN missions in Haiti (MINUSTAH) and Côte d'Ivoire (ONUCI) during their liquidation process.[59]

## TRAINING OF TROOPS AND UN PERSONNEL

In its 2012 report, UNEP recommended integrating environmental issues into pre-deployment and on-arrival field training.[60] Indeed, the development of DFS's 2017 Environment Strategy relied on training material, along with the recruitment of environmental officers at headquarters and in field missions.

The training of UN peacekeeping staff and troops serving in operations is the responsibility of both DPKO/DFS and the member states providing the troops.[61] In 2013, the Integrated Training Service (shared between DPKO and DFS) appeared reluctant to integrate environmental issues into training programs. The service's director highlighted a form of saturation: the organization could not provide training on everything, and the environment was not seen as a priority and was considered more a matter of awareness raising than training.[62]

Nevertheless, the 2017 Core Pre-deployment Training Materials, available in the UN Peacekeeping Resource Hub, include a lesson in Module 3 dedicated to "Environment and Natural Resources."[63] This lesson integrates questions of missions' environmental impact and environmental footprint and issues related to the role of

Table 3. Technical assistance to UN missions through REACT (2017)[64]

| | MINURSO | MINUSCA | MINUSMA | MINUSTAH | MINUSCO | ONUCI | UNAMA | UNDOF | UNISFA | UNIFIL | UNMIL | UNMISS | UNSOS | UNTSO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Energy | ● | | ● | | | | | | | ● | | | ● | |
| Water and wastewater | | | ● | | | | ● | | | | | ● | | |
| Solid waste | | ● | ● | ● | ● | ● | | | | | ● | | | ● |
| Wider impact | | | | | | | | | | | | | | |
| Env. management | | | | | | | | ● | ● | ● | | | | ● |

Source: DFS Environment Strategy, November 2017

58 UN Field Support, *DFS Environment Strategy*, "Executive Summary," November 2017, p. 4.

59 UN Field Support, *Progress So Far: DFS Environment Strategy*, November 2017, p. 1.

60 UNEP, *Greening the Blue Helmets*, p. 82.

61 Interview with official from DPKO/DFS's Integrated Training Service, New York, February 2013.

62 Interview with official from DPKO/DFS's Division for Policy, Evaluation and Training, New York, February 2013.

63 See http://research.un.org/revisedcptm2017 .

64 UN Field Support, *Progress So Far: DFS Environment Strategy*, November 2017, p. 1.

natural resources in conflict and peacebuilding (in line with the online training developed by UNITAR and the International Institute for Sustainable Development with the support of UNEP and DPKO/DFS based on UNEP's report *Greening the Blue Helmets*).

Even if it is too early to evaluate the outcomes of the recent inclusion of this lesson, it is worth mentioning that its application in training for military personnel is the responsibility of each troop- and police-contributing country. DFS advises these countries and provides resources—including manuals and PowerPoint presentations for pre-deployment training—but has little power to assess their implementation. Even states that see benefit in training their soldiers on environmental issues may not have the necessary resources and expertise or may not see it as a priority. Raising awareness of environmental issues is at the discretion of each troop- and police-contributing country.

Nevertheless, in the press statement published in December 2017, the members of the Security Council

> encouraged Member States to incorporate, as appropriate, environmental guidelines into their national training programs for military and police personnel in preparation for deployment to United Nations Peacekeeping Operations. They further requested the Secretary-General to continue to ensure that civilian personnel deployed in peacekeeping operations receive similar training.[65]

This decision came after the 2016 recommendations by the UN Board of Auditors on the need for pre-deployment environmental training for military personnel and for the appointment of military environmental advisers.[66]

The UN has also considered developing specific training on particular topics, such as wastewater management or country-specific environmental challenges. The November 2017 executive summary of DFS's Environment Strategy stated that "increased emphasis will be placed on awareness-raising and behavioral change for both UN staff and military and police contingents with training becoming mandatory in some areas, and additional materials and guidance developed where needed."[67] These trainings could focus on both technical skills and specific topics, such as waste and wastewater management, as well as contextual elements, such as the urban dynamics in which peacekeepers operate or local modes of managing natural resources. As part of their planning and design processes, it is paramount that missions recruit well-trained environmental officers, waste management officers, spatial planners, and engineers working on environmental matters such as energy, water, sanitation, and waste. It is also necessary that missions have the capacity to incorporate local construction practices when possible and consider local cultures and to operate mindfully in the vicinity of cultural and historical sites.

Training modules for UN troops and personnel in specific areas can improve current practices as well as the lasting impacts of missions on local communities and the environment. Acknowledging that there should be more work done in this area, DFS's Environment Section is in the process of hiring an expert on communication and training through REACT.[68]

## BEST PRACTICES AND LESSONS LEARNED FROM SMALL-SCALE PROJECTS

UNEP's 2012 report mentions a series of success stories, or illustrative examples, to show the concrete activities implemented to reduce UN peace operations' environmental footprint. They are mostly small-scale projects meant to highlight lessons learned and best practices. UNEP supports these actions through the REACT partnership, which provides staff and technical assistance.[69]

Multiple success stories were also identified in interviews conducted as part of a separate study.[70]

65 UN Security Council, *Press Statement on Environmental Management of Peacekeeping Operations*, UN Doc. SC/13134-ENV/DEV/1830-PKO/700, December 21, 2017.

66 UN General Assembly, *Financial Report and Audited Financial Statements for the 12-Month Period from 1 July 2015 to 30 June 2016 and Report of the Board of Auditors*, UN Doc. A/71/5 (Vol. II), January 20, 2017.

67 UN Field Support, *DFS Environment Strategy*, "Executive Summary," November 2017, p. 2

68 Interview with officials from DFS Environment Section, New York, March 2018.

69 UN Field Support, *DFS Environment Strategy*, "Executive Summary," April 2017, p. 1.

70 Lucile Maertens, "From Green to Blue: Securitization of the Environment within the United Nations" (original title in French: "Quand le Bleu passe au vert: La sécurisation de l'environnement à l'ONU"), (PhD diss., Sciences Po Paris and University of Geneva, 2015).

In Haiti and Kosovo, missions operating in existing urban environments implemented waste and pollution management plans both for themselves and for the community. Broader activities related to resource management have been undertaken by the missions in Darfur, Haiti, and Western Sahara. Likewise, several missions participated in a reforestation campaign, regularly mentioned in interviews, and in "clean-up" events.[71]

Although they may seem anecdotal, activities undertaken as part of quick impact projects (QIPs) can also contribute to the implementation of DFS's Environment Strategy, capacity building, and community empowerment.[72] For instance, in Haiti, among the 1,782 projects conducted by MINUSTAH from 2004 to 2017, 68 were dedicated to the protection of the environment, and 463 to water, health, and sanitation.[73] In many missions, small-scale projects were also implemented as part of the Environment Strategy's "wider impact" pillar. These projects "aimed at environmental improvement, ranging from tree planting to awareness raising to clean-up events involving staff."[74] For example, the missions in Côte d'Ivoire and the Democratic Republic of the Congo worked on restoration and community projects, respectively.

In a four-page document entitled *Environmental Good Practice*, published in November 2017, DFS lists a series of environmental good practices under each pillar of the Environment Strategy.[75] In terms of energy, while fifteen missions use solar energy at least partially, renewable energy supplies less than 0.1 percent of the total energy consumed. The UN


Members of the Indonesian Formed Police Unit working with the AU/UN Hybrid Operation in Darfur (UNAMID) plant trees outside UNAMID headquarters, El Fasher, Sudan, June 5, 2012. UN Photo/Albert González Farran

71 UN Field Support, *Progress So Far: DFS Environment Strategy*, November 2017, p. 3.

72 Quick impact projects are small-scale projects planned and implemented over a short period of time and with a reduced budget.

73 The focus on water, health, and sanitation also resulted from the cholera outbreak. Interview with MINUSTAH's civil affairs team, Port-au-Prince, April 26, 2017.

74 UN Field Support, *Progress So Far: DFS Environment Strategy*, November 2017, p. 1.

75 DFS, *Environmental Good Practice: 2017 Implementation of the DFS Environment Strategy in Field Missions*, November 2017, p. 3, available at https://peacekeeping.un.org/sites/default/files/171117_environmental_strategy_good_practices.pdf .

Peacekeeping Force in Cyprus (UNFICYP) and UNMISS are currently implementing projects to reduce energy demand and costs. Similarly, MINUSMA has made a small-scale investment in pilot technology combining wind and solar energy, UNIFIL and the UN Assistance Mission for Iraq (UNAMI) have developed energy management programs, and UNMIK has worked to reduce energy consumption in its vehicle fleet.

In terms of water and wastewater, UN peace operations have purchased more than 400 wastewater treatment plants. In Darfur, for example, wastewater recycling covered 40 percent of the mission's water needs in 2014 and 2015. UNMISS and MINUSCA also have programs to treat wastewater and minimize risks associated with the formation of standing water. And MINUSTAH reduced its solid waste by more than 10 percent in 2015 and 2016.[76] On solid waste, the example of MINUSTAH is presented as "a lesson for all other missions that it is better to start early when it comes to hazardous waste management."[77] Likewise, according to DFS, MINUSMA's initiative takes root in the "lessons learned from previous waste management experiences with local solutions."[78]

From such success stories, DFS collects and disseminates best practices and lessons learned. These both guide the action of the organization and legitimize its activities.[79] DPKO and DFS's Division for Policy, Evaluation and Training has a team dedicated to collecting these lessons learned and best practices in the field. However, the collection system faces multiple weaknesses, especially in collecting those from the support side of missions.

Environmental best practices are disseminated in four different ways. First, documents and relevant material are available "to technical staff from all missions on the online COSMOS site that has been established to support information sharing in the implementation of the DFS Environment Strategy."[80] Documents such as the summary of good practices mentioned earlier can be circulated on this site.

Second, staff in missions have the opportunity to share their own experiences in the working groups for each pillar. These task-oriented working groups support the implementation of DFS's Environment Strategy. They are chaired by mission directors and chiefs of mission support and consist of personnel from field missions and headquarters and staff provided through REACT. These working groups "have been set up to develop detailed operational plans across each of the five pillars above, with quarterly review of progress."[81]

Third, missions conduct campaigns to mainstream environmental management into their work. For instance, the UN Mission for the Referendum in Western Sahara (MINURSO) organized a week-long awareness campaign "giving personnel the opportunity to learn about recycling and the need to minimize vehicle idling." As another example, "UNMIL is mainstreaming environmental management across the mission, under the guidance of the Green Working Group, composed of personnel from all levels."[82] Likewise, MINUSMA's environmental unit created a poster in English and French to raise awareness of eco-friendly practices among the mission's personnel (see Figure 4).

Fourth, good practices are spread more informally through the circulation of UN personnel, the commitment of key individuals, and the diffusion of illustrative examples.

Since the end of the 2000s, DPKO and DFS have been developing an environmental approach for UN peace operations in line with broader environmental campaigns advocated within the UN system. Small-scale projects show the emergence of environmental practices implemented both to minimize the risks of environmental damage and to proactively protect the environment or reduce its

76 UN Field Support, *Progress So Far: DFS Environment Strategy*, November 2017, pp. 2–3.

77 UN Field Support, *Environmental Good Practice*, November 2017, p. 3.

78 Ibid.

79 Asmara Klein, Camille Laporte, and Marie Saiget, eds., *Les bonnes pratiques des organisations internationales* (Paris: Presses de la Fondation nationale des sciences politiques, 2015), p. 31.

80 UN Field Support, *Environmental Good Practice*, November 2017, p. 4.

81 UN Field Support, *DFS Environment Strategy*, "Executive Summary," November 2017, p. 4.

82 UN Field Support, *Environmental Good Practice*, November 2017, p. 4.

Figure 4. Poster for raising awareness on the environment in MINUSMA

ongoing degradation. Yet the environmental footprint of UN peace operations still puts significant pressure on ecosystems and local communities.

## Limits and Constraints

While peace operations have a considerable degree of flexibility, they also face numerous limits and constraints that have been slowing down the process of greening UN peace operations. This is why it took a number of years to define and approve a comprehensive environmental strategy, with almost ten years between the first draft of the Environmental Policy, finally adopted in 2009, and the launch of DFS's Environment Strategy at the end of 2016. There are three main reasons for these limited outcomes: (1) uneven implementation of the Environment Strategy among missions; (2) difficulty in ensuring oversight from UN headquarters; and (3) the politics of sourcing and procurement.

### UNEVEN IMPLEMENTATION OF THE ENVIRONMENT STRATEGY

Missions unevenly implement UN environmental policies and guidelines. The implementation of the Environment Strategy is uneven due to numerous disparities among missions in terms of staff allocation, budget, equipment, local circumstances, and senior leadership. Each mission receives a different budget according to its mandate and tasks, and not every mission has leadership that recognizes the risks of not integrating environmental considerations into daily operations, including the potential for more backlash and higher costs in the long term (e.g., due to compensation claims for environmental damage).

Moreover, each operation includes troops from different countries and cultures, who come with materials, equipment, and goods with varying environmental and life-style standards. These differences are manifested in missions' environmental footprint. On the one hand, a UN base deployed by wealthier countries generates a larger long-term environmental footprint than one deployed by less wealthy nations. As wealthier countries bring more equipment and resources into mission areas to support the quality of life of their troops (such as larger and more equipped modular structures for dwelling that require more energy to maintain leisure spaces, gyms, and canteens) and the efficiency of the mission (such as munitions, vehicles, and telecommunications equipment).[83] The differences can be identified in the spatial organization, deployment, and use of land and equipment.[84] On the other hand, wealthier countries can purchase more eco-friendly materials and invest more in improving local capacity.[85]

Because of such disparities, models that are successful in one mission cannot be reproduced in all contexts. For example, in an independent investigation conducted in 2013, UN staff in New York mentioned the UN Interim Force in Lebanon (UNIFIL) as an example to follow in terms of efforts to reduce peace operations' environmental footprint.[86] Yet the troops supplying UNIFIL often originate from richer countries with more eco-friendly materials and larger budgets to purchase waste-management supplies. Moreover, the mission has access to adequate local infrastructure and can focus on improving camps set up decades ago.

Furthermore, local circumstances differ from one operation to another. The model status of forces agreement commits host governments to helping missions obtain and make available water, sewerage, electricity, and other facilities for free or, when that is not possible, at the most favorable rates. However, host countries are sometimes reluctant to let peacekeepers use their natural resources, which they can perceive as interference with their natural resource management. The reality is that UN peace operations often lack accessible, practical, and safe options for disposing of wastewater and solid waste, and importing necessary equipment or using international contractors is often expensive.[87] Aside from these

83 Joel van der Beek, "A Speculative Financial and Socio-economic Model for Evaluating and Enhancing International Peacekeeping Missions," in *BLUE: The Architecture of UN Peacekeeping*, pp. 42–43.

84 Shoshan, *BLUE: The Architecture of UN Peacekeeping*, pp. 6–17.

85 Van der Beek, "A Speculative Financial and Socio-economic Model for Evaluating and Enhancing International Peacekeeping Missions," pp. 42–43.

86 Maertens, "From Green to Blue: Securitization of the Environment within the United Nations."

87 Maertens, "Quand les Casques bleus passent au vert," p. 71.

disparities, the UN's internal evaluation system still requires improvement to fully ensure the uniform implementation of DFS's Environment Strategy.

## DIFFICULTY IN ENSURING OVERSIGHT FROM HEADQUARTERS

The lack of standardization also results from difficulty in ensuring oversight inside missions and from UN headquarters, as the oversight system used by headquarters to verify the implementation of its policies at the field level is still incomplete. However, the recent introduction of a performance and risk management framework to report detailed data from each mission should, in the long run, improve this situation, which past audits and evaluations have deplored.

In September 2012, following an audit of UN peacekeeping operations' waste management systems, the UN Office of Internal Oversight Services (OIOS) reported to the Secretariat that it considered the monitoring system to be "unsatisfactory."[88] Between 2014 and 2015, OIOS audited waste management in seven UN peacekeeping operations. In 2015, more than four years after the cholera outbreak in Haiti, OIOS concluded that "the MINUSTAH governance, risk management and control processes examined were initially assessed as unsatisfactory in providing reasonable assurance regarding the effective management of waste in MINUSTAH."[89] In 2016, the office assessed DFS's guidance and oversight of wastewater management in peacekeeping operations as "partially satisfactory."[90] These audits not only helped identify shortcomings in the oversight system but also provided recommendations for improving missions' environmental performance.

This limited oversight results from the lack of a consistent system for collecting comprehensive data and making it accessible. DFS's Environment Strategy intends to build systems to collect "more robust data" with "consistent methodologies for site assessments."[91] For instance, energy efficiency can be improved by meters measuring both production and consumption to verify that generators run at their highest achievable efficiencies, as in UNIFIL, where synchronized generators help to monitor all energy output.[92]

In November 2017, however, DFS acknowledged that the baseline data used to set up the goals of its Environment Strategy "is tentative and based on a preliminary data collection exercise from missions."[93] The system is short of automated tools and resources to systematically measure performance. Data on the long-term impact of missions, needed to strengthen efforts to improve environmental sustainability even after their departure, is also missing. Such processes of data collection and verification are indispensable to the even implementation of environmental policies across missions.

Despite recent efforts to improve data collection, the challenges facing the oversight system also result from the gap between UN headquarters, which decides on environmental policies, and field missions, which are meant to implement them. Staff members serving in UN peace operations who are already responsible for a large number of tasks might not have internalized these policies, and it is difficult for headquarters to closely supervise their implementation. While the Environmental Policy is compulsory for all missions, there are no penalties for noncompliance, even though it includes a dedicated section on "standards of conduct for personnel." In other words, it is a toothless policy without individual accountability or staff members who are not performing.[94]

The oversight system's difficulties also lie in environmental issues' ambiguous position between substantive and support divisions. While the negative consequences of poor environmental management mostly affect the substantive side of missions, especially since they impact their relationship with local communities, support divisions are in charge of environmental issues as part of their tasks related to equipment and camp

88 Maertens, "Quand les Casques bleus passent au vert," p. 71.

89 OIOS, *Audit of Waste Management in the United Nations Stabilization Mission in Haiti*, Internal Audit Division Report 2015/068, June 30, 2015, p. 2.

90 OIOS, *Audit of the Department of Field Support's Guidance and Oversight of Wastewater Management in Peacekeeping Operations*, Internal Audit Division Report 2016/013, March 9, 2016.

91 UN Field Support, *DFS Environment Strategy*, "Executive Summary," November 2017, p. 1.

92 UN Field Support, *Environmental Good Practice*, November 2017, p. 1.

93 UN Field Support, *DFS Environment Strategy*, "Executive Summary," November 2017, p. 2.

94 Maertens, "Quand les Casques bleus passent au vert," p. 73.

management.

Shortcomings in the oversight system can lead to "greenwashing"—displaying best practices and success stories and using policies to show efforts are being made while hiding or denying mistakes and mismanagement. Indeed, according to several UN officials, information is selectively reported, especially from missions to headquarters.[95] This creates a vicious cycle: by not informing headquarters and member states of their failures for fear of damaging their image and relationship with local actors, mission leaders do not obtain approval for the compensation or funding necessary to reduce their environmental impact.

Even though it is too early to assess the effectiveness of the new performance management system set up in 2017, recent efforts have aimed to address some of these issues. Through guidelines and training modules on data collection, UN headquarters intends to improve collection of data related to key performance indicators for the five pillars of the Environment Strategy. Identification of data owners (e.g., staff in charge of monitoring and communicating data) and accountability for data accuracy should also support systematic monitoring of environmental performance.

## POLITICS OF SOURCING AND PROCUREMENT

The difficulty of reducing peace operations' environmental impact also results from the politics of sourcing and procurement. The UN's organizational culture and member states' preferences shape the way peacekeeping operations are designed and carried out.

UN peace operations are planned as short-term operations; although the median duration of peacekeeping missions since 2000 has been 6.5 years, their mandates are renewed each year.[96] Missions are also carried out on a yearly budget. This budgetary cycle was among the challenges DFS identified in the implementation of its Environmental Policy, as it encumbers long-term investment, planning, and procurement of materials, particularly since the financial crisis of 2007–2008 increased financial pressure from member states. The brief and urgent timeline of mission deployments, coupled with security concerns, leads to the implementation of planning procedures that leave many pressing environmental concerns, such as those related to the design of camps' waste management infrastructure, unplanned and unresolved. These procedures are hard to change and continue to be applied, especially for rapid deployments.[97]

Besides their initial design, the way missions are carried out, especially in terms of procurement and sourcing, affects their environmental impact. UN missions primarily rely on international suppliers and external logistics firms that shape the landscape where missions operate and inflate their environmental footprint. For instance, the company Ecolog has become a leading provider of catering, supplies, construction, technology, facility management, and environmental services for INUSMA, UNSOS, and other missions.[98] As a result, capacities and resources to maintain and support UN peace operations are imported from around the world, from modular construction systems to food and cooks. This global flow of commodities and expertise, which can be traced to the UN Global Marketplace—the common procurement platform for the UN system—is excessively wasteful.[99]

Misunderstanding of or misconceptions about local economies, as well as the lack of environmental assessments at an early stage, can also lead to environmentally damaging practices. For instance, the bricks used to build UNAMID's camp and the facilities for humanitarian actors in Darfur were bought from the local population in order to support the local economy and promote women's employment, but they were baked over wood fires, which contributed to deforestation.[100] Misunder-

95 Ibid.

96 UN Field Support, *DFS Environment Strategy*, "Executive Summary," November 2017, p. 3.

97 Shoshan and Szita, "Reimagining Peacekeeping Missions."

98 Active in more than thirty-six countries and with 12,000 personnel in more than 150 locations, Ecolog supplies UN peace operations including MINUSMA (see the fourth section). It provides "customized solutions to governments and defense, humanitarian organizations and commercial clients in the sectors of Oil & Gas, Mining, Energy and Infrastructure projects." See https://ecolog-international.com/en/ .

99 See www.ungm.org and .

100 UNEP, *Greening the Blue Helmets*, p. 21.

standing of local economies and environmental practices can reverse the potential benefits of sourcing locally and even have a negative impact on the environment and the local economy by inflating local prices of some supplies.

Some shortcomings in the implementation of the Environmental Policy thus result from sourcing practices—the materials used directly contributing to missions' environmental footprint—which are embedded in the politics surrounding procurement for UN peace operations. Procurement policies answer to member states' financial and political interests. Yet these interests may be contrary to the goals of the Environment Strategy, including to use more eco-friendly material and technology. This constitutes a major obstacle for the implementation of environmentally sound practices.

For instance, a study conducted in 2013 showed that the top troop-contributing countries were particularly suspicious of equipment standardization projects. Indeed, some member states, especially developing countries and Russia, were strongly opposed to environmental standards under the UN reimbursement system for contingent-owned equipment (decided every three years in the General Assembly) and under the procurement principles for selecting vendors. Some governments protested that, if these principles incorporated strict environmental standards, their companies would not be competitive enough on the international market, which would violate the UN procurement objective of fair, equal, and geographically equitable treatment of potential vendors. For example, India declined to provide air-conditioning systems without ozone-depleting substances (ODS) for its troops in Haiti, as required by MINUSTAH in accordance with the Montreal Protocol's phaseout deadlines, while it still had stock of air conditioners with ODS in India. Russia also strongly argued against environmental standards for mission equipment, presumably in order to protect its market, being a major supplier of air transport.[101]

The fact that the Security Council could only agree on a press statement on the environmental management of peacekeeping operations in December 2017 is a consequence and an illustration of this opposition. Likewise, all mandates for peace operations from the General Assembly and the Security Council refer to "existing rules and regulations" when requesting missions to manage their environmental impact. The 2017 manual on reimbursement for contingent-owned equipment introduced a financial incentive (5 percent) for troop- and police-contributing countries to deploy with environmentally enhanced accommodations or to replace fuel generators with renewable energy sources.[102] However, no agreement has been reached so far in the Fifth Committee, and debate continues over the appropriate standards.[103]

Moreover, in comparison to other violations committed in the context of peace operations, civil society has not been advocating very vocally for greener interventions so far.[104] Without public pressure, member states have managed to slow down the process of mainstreaming environmental policies. It is therefore not surprising that it took ten years for DFS to elaborate its Environment Strategy.

## Case Study: The Spatial Footprint of MINUSMA

We chose to look at the case of MINUSMA as the first mission with a direct mandate to consider and manage its environmental impact. This case study assesses the environmental challenges the mission is facing, which are illustrative of similar situations.

Since the creation of MINUSMA in 2013, UN entities have designed and built dozens of camps, super-camps, headquarters, logistics hubs, and airfields in fourteen cities across Mali to support its deployment.[105] Although these spaces are mostly located within existing inhabited areas provided by the host government, the mission has rarely taken

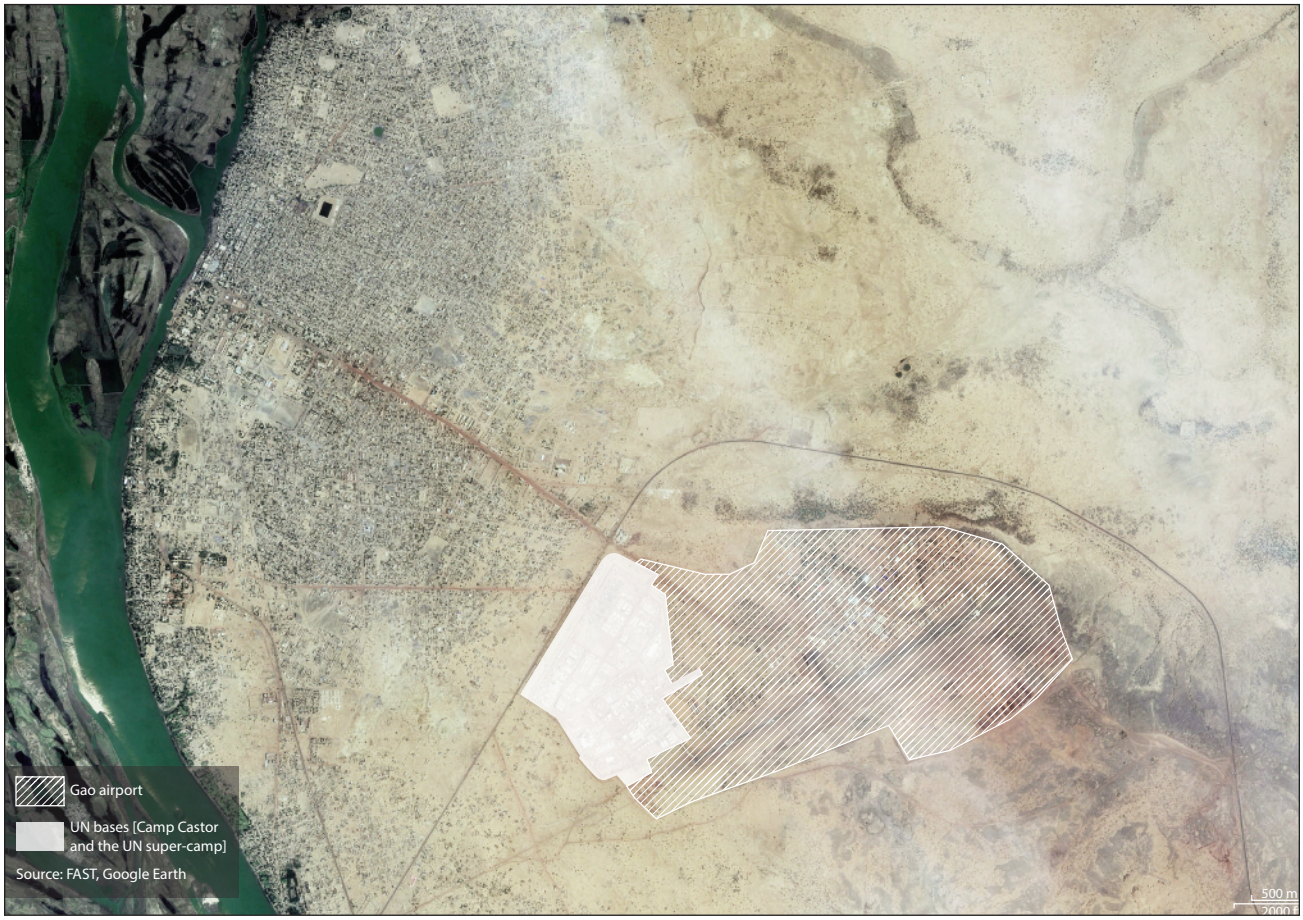
101 Maertens, "Quand les Casques bleus passent au vert," pp. 419–420.

102 "An environmental enhancement supplement of an additional 5 per cent of the reimbursement rate to the troop/police contributor will be added if the provided tentage is shown to have additional features included which are designed to improve the heating and cooling effectiveness and efficiency of the facility." UN General Assembly, *Manual on Policies and Procedures Concerning the Reimbursement and Control of Contingent-Owned Equipment of Troop/Police Contributors Participating in Peacekeeping Missions*, UN Doc. A/72/288, August 4, 2017.

103 Ibid.

104 In the case of the cholera outbreak in Haiti, the focus has been on official recognition of the UN's responsibility and compensation packages for the victims.

105 See UN Geospatial Information Section website, available at http://www.un.org/Depts/Cartographic/english/htmain.htm .




Aerial view of MINUSMA bases in Gao and surrounding area

their multidimensional impacts on the local population and environment into account in its planning and procurement processes. UN bases are designed, constructed, maintained, and prepared for hand-over according to UN guidelines and frameworks designed either by a UN civilian engineering section or by military engineers in national contingents. Instead, their broad effects on their surroundings should be investigated from a multidisciplinary perspective.[106]

This section focuses on an integrated analysis of MINUSMA conducted from 2014 to 2016, in particular of Camp Castor in Gao (designed by the Dutch contingent and built by the Dutch and the German contingents) and of the operational base in Bamako.[107] The study revealed that the effectiveness of an integrated peace operation depends on the capacities of various UN entities, the local community, and the environment. Consideration of these factors should be intrinsic to shaping the spatial organization of the bases and infrastructure of UN peace operations. Furthermore, a preliminary and ongoing integrated analysis could help UN entities to identify local challenges, resources, and the potential for long-term regenerative sustainability, as well as to balance between localized action and global UN environmental and sustainable development strategies and agendas.

## CAMP CASTOR IN GAO

In Gao, MINUSMA has two main bases that are located next to each other: Camp Castor (inside of which contingents' camps are located and which is

106 UN DPKO, *United Nations Peacekeeping Missions Military Engineer Unit Manual*, September 2015, pp. 14–21.

107 This part of the report is based on a study initiated and conducted by the Foundation for Achieving Seamless Territory (FAST) with the support of the Dutch Ministry of Defense and the Dutch Ministry of Foreign Affairs that took place from 2014 to 2016 in the Netherlands through a collaboration among military engineers, economists, landscape designers, architects, planners, and anthropologists.

Photo 1. UN super-camp, Gao, Mali, 2016. Malkit Shoshan/FAST.


Photo 2. Hybrid energy plant at Camp Castor, Gao, Mali, 2016. Malkit Shoshan/FAST.

Photo 3. Edible gardens next to the Nepalese base at the UN super-camp, Gao, Mali, 2016.

Photo 4. Water treatment infrastructure streaming to a water pool at Camp Castor, Gao, Mali, 2016.Malkit Shoshan/FAST.

Photo 5. Ecolog base within the UN super-camp, Gao, Mali, 2016. Malkit Shoshan/FAST.

Photo 6. Waste collection at the UN super-camp, Gao, Mali, 2016. Malkit Shoshan/FAST.

distinct from the rest of MINUSMA's super-camp), and an airfield situated alongside the city's former international airport. The proximity of the bases to inhabited areas requires serious consideration of how the two environments interact: the local environment and the UN bases (see aerial image).

Camp Castor measures about 800,000 square meters and is located less than 500 meters from local housing and 2,800 meters from the city center. The overall spatial footprint of the UN in Gao is one-third as big as the city and is located in an area designated for the city's future growth.

In MINUSMA's initial deployment phase, Camp Castor was composed of tents and improvised office buildings comprised of "plug-and-play containers" with no foundations. Everything was planned to be taken back to the Netherlands at the end of the mission. Dutch engineers used local techniques to form and compress laterite roads. However, the helipad was constructed of concrete imported from the Netherlands. The fencing around the perimeter of the base was built of locally available materials such as concrete, wood, and metal wires, which inflated local prices of construction supplies. The first iteration of the camp had tents and a small rest-and-recuperation facility to accommodate the arrival of the first 400 peacekeepers.

While the design of Camp Castor was ongoing, it remained isolated and unconnected to the local infrastructure for security reasons. Camp Castor's electricity was at first provided only by gas and oil generators, but it was slowly complemented by a set of solar panels, as the Dutch contingent attempted to increase the use of renewable energy (see Photo 2). While electricity within the base was available continuously, the local system in Gao was capable of providing power for just a few hours a day. At an early stage of the mission, wells were dug by the UN and by Dutch engineers to allow immediate access to water. Sewage, water, electricity, and telecommunications pipes and cables were installed between 1.7 and 2.5 meters underground. An assortment of filters was installed at the edge of the base to treat wastewater, and three large pools were dug to collect the treated water (see Photo 4). Within the camp, a system of flood protection channels was dug.

The infrastructure at the base evolved over time, and the tents were replaced by accommodation containers with armored shells on top for protection against rockets. Parts of these structures were transported to Mali from Afghanistan, where the Dutch contingent was deployed in the NATO-led International Security Assistance Force. The metal prefabricated frames and sheets have limited thermal insulation, and the hot summer at the edge of the desert requires extensive use of air conditioning. Locally produced compressed red bricks could reduce the environmental footprint of the mission by improving thermal insulation in the various structures, reducing the use of air conditioning, and contributing to local employment and capacity building.

During the colder months, the average electrical power consumption in the base is about 450 megawatt-hours/month. In summer, this doubles to almost 900. The peacekeepers use about 8,500 megawatt-hours yearly, of which 370 are generated by solar panels and the rest by generators. Water consumption in Camp Castor is restricted to 100 liters per person per day for showers, cooking, and cleaning, which is 20 liters over the limit prescribed by the UN. The drinking water is bottled. In 2017, the average number of peacekeepers in Camp Castor was about 1,100.[108]

The Dutch engineers affirmed that the thinking behind the design of the base was based only on its military functionality. The brief timeline, security concerns, and political framework limited the possibility of including other considerations. At the end of a UN mission, the Netherlands reuses materials it used to construct camps in other Dutch bases when possible and economically feasible. If reuse is not possible, it resells or donates the materials locally or otherwise deconstructs and disposes of them. It leaves behind sewage, power systems, fences, and roads. While engineers provide input, the decision whether to leave parts of the base intact for local use or break them apart is mostly political.

Despite its specificities, Camp Castor illustrates the extent of the physical presence of a UN peace operation. But while Dutch military engineers

108 Data provided by the Dutch Military Corps of Engineers.

work within the scope and design regulations of the UN, their bases look different than other UN camps in their vicinity and other bases within the same mission. Furthermore, although the UN sets the design and regulatory framework in advance, technological know-how and quality of equipment and materials among different peacekeeping forces is uneven. As such, UN bases are distinct from one another not only in their appearance but also in the environmental footprint they generate.

## THE OPERATIONAL BASE IN BAMAKO

Bamako, the capital of Mali, is home to 2.515 million inhabitants and has a population growth rate of 3.5 percent.[109] The MINUSMA operational base (MOB, distinct from the mission headquarters located in the Badalabougou neighbourhood in Bamako) is located northeast of the Bamako-Sénou International Airport and is surrounded by agricultural fields, farms, and small huts. The closest farm is located less than 100 meters from the perimeter of the base, and the edge of the nearest urban neighborhood is about one kilometer away. Before the development of the land into a peacekeeping base by the UN, as the host country proposed, the area was used as a field for agriculture and grazing.

The UN Engineering Planning and Design Unit designed MINUSMA's operational base in collaboration with a freelance architect. The base is organized along a generic grid structure. It includes water, energy, and telecommunications infrastructure as well as a hospital, a library, playgrounds, parade zones, indoor and outdoor cafeterias, a conference center, accommodations for the all source information fusion unit and formed police unit, areas for security units, and offices for civilian mission support officers and police and military staff officers. The layout of the base is organized by programmatic section and divided by roads.

The base is separated from its surroundings by a layered security belt of chain link fence and Hesco bastions (large wire-mesh sandbags), a two-meter-deep ditch, and an additional 2.6-meter-high Hesco bastion belt. The last belt incorporates nineteen watchtowers. The two entrances include a main point of access to the north along an existing local road. The principal entrance is surrounded by buffer zones and a sequence of parking lots. A smaller entrance to the west is located alongside a path newly paved by the UN in accordance with the host government.

The interior parts of the base were gradually installed from 2015 to 2017. They include a mix of prefabricated structures and containers. The base comprises an area of about thirty-six hectares (comparable to five typical New York City blocks). Inside the base are small areas allocated for different programs and contingent troops. In the southwest of the base, 10,000 square meters of fenced area are assigned to Ecolog, a private global logistics company providing rations to MINUSMA. Ecolog's area includes a 5,000-square-meter warehouse, a large borehole, and over a dozen structures of a range of sizes.[110]

Contemporary urban paradigms and the UN 2030 Agenda for Sustainable Development propagate environmentally mindful practices and emissions reduction through the use of green buildings and infrastructure.[111] Yet most of the MOB's infrastructure, containers, and prefabricated structures are flown in from around the world with limited local sourcing. Moreover, the standard use of materials such as metal and wood generates structures that have to be adapted to the local climate through excessive use of energy for cooling and heating.[112] As a result, the UN method of building and maintaining its camps has an extensive environmental and carbon footprint.

MINUSMA's operational base and Camp Castor demonstrate the mission's significant impact on the Malian environment. If the UN adopted a strategy of regenerative sustainability, its missions could be regarded as resources that contribute to lasting sustainability for cities like Bamako and Gao. These cities struggle to respond to their rapidly growing population with adequate urban expansion and infrastructure, particularly

109 US Central Intelligence Agency, "The World Factbook: Mali," April 9, 2018, available at www.cia.gov/library/publications/the-world-factbook/geos/ml.html .

110 MINUSMA outsources procurement, rations, and waste management to Ecolog. While Ecolog's headquarters is in Dubai, it supplies material goods and human resources from around the world to UN mission areas.

111 International Policy Centre for Inclusive Growth, "A New Urban Paradigm: Pathways to Sustainable Development," UN Development Programme, *Policy in Focus* 13, no. 3, available at ; United Nations, "The New Urban Agenda: Key Commitments," October 20, 2016, available at www.un.org/sustainabledevelopment/blog/2016/10/newurbanagenda/ .

112 UNEP, *Greening the Blue Report 2016*.

concerning access to water, food, energy, healthcare, education and telecommunications networks. As mentioned above, UN bases operate for an average of about 6.5 years. In this time frame, they can gradually evolve to support and strengthen urban services.

## Recommendations

While this report focuses on UN peace operations' environmental concerns and practices, it does not imply that environmental management is one of their main activities, even though, as a crosscutting issue, it does touch upon much of what they do. Yet despite being less central to the core mandate of peace operations, environmental problems echo the "do no harm" principle and deserve greater attention because of their potentially destructive effects as unintended consequences.

Based on this review of environmental concerns and issues at stake and of the current Environment Strategy and its weaknesses, we put forward a series of recommendations. Advocating for a better understanding of long-term impacts, we suggest ways to mitigate and reduce UN peace operations' environmental footprint and the environmental pressure they place on local ecosystems and communities.

### SHORT-TERM RECOMMENDATIONS

Since early 2017, DFS has had a strong Environment Strategy with a vision and timeline. These short-term recommendations concern the full implementation of the strategy and the achievement of its objectives.

1. **Increase financial and human resources dedicated to the implementation of the Environment Strategy and to planning.**

   Each mission should be given adequate human resources to implement and comply with the Environmental Policy, depending on its characteristics (availability of local infrastructure, deployment in hard-to-reach areas, number of camps, etc.). Member states should allow adequate staff, including environmental officers in missions and in headquarters in charge of facilitating the implementation of the Environmental Policy and guidelines, assessing compliance with them, preventing environmental damage, promoting eco-friendly practices, and systematically collecting lessons learned.

   Member states and mission leadership should also strengthen human resources in the areas of engineering and urban planning by reviewing terms of reference for positions in mission support and appointing at least one environmental engineer per mission (in addition to the environmental officers in the Office of the Director of Mission Support). Urban planners should also be commissioned to provide preliminary spatial and socioeconomic analyses of the local context to help identify opportunities for collaboration and local sourcing in the short and long term (if assessments indicate this would not have a negative impact on the environment). Moreover, these preliminary analyses and the presence of environmental engineers could be used to train other engineers and UN actors in each mission on a holistic approach to environmental management.

   Adequate human and financial resources should also be devoted to planning missions to ensure that infrastructure integrates and strengthens local systems in the short and long term.

   Member states and DFS should focus on three main areas:

   a. Energy, by providing funding to focus more on energy efficiency and on renewable energy when feasible;
   b. Water and wastewater, by financially supporting projects to install and operate all treatment plants without any risk and to monitor groundwater; and
   c. Solid waste management (an area that so far has no dedicated positions), by appointing waste management officers in engineering sections in charge of designing and managing missions' infrastructure.

2. **Implement mandatory training on environmental management for all personnel in missions.**

   DFS and DPKO should ensure that environmental issues are included in pre-deployment training for all civilians operating in missions. Troop- and police-contributing countries should include environmental management in the pre-deployment training of their troops and

police. Drawing on the increase in human resources proposed above, in-mission training on environmental management should also be mandatory for all uniformed personnel. Training modules should seek to raise general awareness of issues related to natural resources and the environment as well as to provide specific technical knowledge. They should also address the specificities of the local context.

3. **Systematically collect data on environmental management from all missions and disseminate lessons learned and best practices.**

   In order to assess improvements and set achievable goals in terms of energy efficiency; water, wastewater, and solid waste management; and environmental restoration, DFS should develop consistent methodologies to collect comparable data over time. Member states should mandate each mission to assess its environmental footprint and the potential risks of its presence for the environment and local communities' livelihoods. The environmental assessment should also take into account the long-term effects of both degradation and regeneration of the resources used by the UN.

   The UN should also strengthen its capacity to collect and disseminate lessons learned and best practices about environmental management and the reduction of missions' footprint. DFS should be vocal not only about its best practices but also about lessons learned from bad experiences and include them in annual reporting to member states.

4. **Use local capacities where feasible.**

   DFS should consider sourcing its maintenance locally where feasible. The most significant contributor to the UN environmental footprint is the transport of people and goods into missions by air, sea, or land. The use of local materials, depending on thorough environmental and economic assessments of the possible medium- and long-term impact, and local expertise can exponentially reduce the cost and environmental footprint of UN missions.

   Moreover, after the first months of deployment, regulated local production of supplies could provide employment, help build capacity, and sustain environmentally minded growth, which could eventually contribute to sustainable development not only at the local level but also globally. For instance, if food production is sourced locally when feasible, peace operations could reduce the environmental footprint caused by long-distance transportation of produce and support small-scale farmers, agricultural production, food access, and food security.

## MEDIUM-TERM RECOMMENDATIONS

Due to the difficulty of implementing them, the following recommendations are considered to be medium-term targets, even though they might address very urgent matters.

5. **Continue to reinforce oversight by systematically monitoring performance indicators and fostering data ownership and accountability.**

   UN headquarters should continue to reinforce its capacity to oversee the implementation of its Environment Strategy in two ways. First, it should continue efforts to strengthen reporting between missions and headquarters through both formal mechanisms (e.g., mandatory participation by every mission in the monthly video meetings set up for each pillar, regular field visits, formal audits) and informal meetings between DFS's Environment Section and environmental officers in the field.

   Second, it should regularly audit data supplied by missions. Data ownership should be systematically established and formal mechanisms put in place to hold data owners accountable for the accuracy of the information they supply.

6. **Extend DFS's partnership with UNEP.**

   DFS should extend its REACT partnership with UNEP to offer permanent technical assistance at UN headquarters, at the Global Service Centre in Brindisi, and in missions. DFS should also seek support from UNEP to advocate for more environmentally responsible peace operations.

7. **Advocate for member states to support sustainable environmental management in peace operations.**

   DFS should seek support from member states, building on the "Group of Friends on Leading on Environmental Management in the Field" and on the 2017 Security Council press statement. While highlighting the long-term benefits of more sustainable interventions, DFS

should warn member states of the significant risks and potentially disastrous effects of noncompliance with the Environmental Policy and guidelines and remind the UN of its obligation to apply the "do no harm" principle. DFS should advocate for member states to provide adequate human and financial resources to enable effective compliance with the Environmental Policy and Environment Strategy. DFS should request member states to create legal obligations that would enable liability for noncompliance.

## LONG-TERM RECOMMENDATION

This last recommendation addresses long-term issues. By focusing on local settings and comprehensive and integrated indicators, it relates to the UN's legacy and accountability even long after the departure of missions.

8. **Develop comprehensive indicators and an integrated approach to environmental concerns**

   The footprint of UN peace operations should be examined through multidisciplinary and multiscalar methods by environmental engineers, economists, and urban planners. They should examine the footprint at a variety of levels and in different contexts, from the site to the local region, the country, and the global environment, to identify the negative impact on natural and man-made environments and to prevent misunderstanding of the local context.

   The footprint of each peacekeeper and physical structure, such as bases, airfields, and headquarters, must also be measured in relation to local circumstances and capacities. By measuring the environmental footprint of peace operations in a more context-specific way, DFS can identify concrete challenges and the potential to foster a positive legacy.

   As such, each mission should be analyzed from a comprehensive environmental and spatial perspective that takes into account its impact on the local context. Such an approach will necessitate the development of indicators that complement the current Environment Strategy. Such indicators can be developed through collaboration among urban designers, environmental officers, engineers, and local experts. Based on such an analysis, actions can be taken to build capacity and reduce the footprint of UN peace operations from beginning to end.

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