

The Model Law on Soil Management in Africa: explanatory notes

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1. Introduction

During its plenary session held on 6 November 2025, the Pan-African Parliament (PAP) officially adopted the Model Law on Soil Management in Africa.¹ The PAP is one of the organs of the African Union. The Model Law on Soil Management was developed over an extended period, beginning with a comprehensive and representative legal study of existing soil legislation across African states.² The process involved soil experts, politicians, and representatives from academia, public administration, and civil society, and included numerous consultations across the continent.³ The PAP, through its Committee on Rural Economy, Agriculture, Natural Resources, and Environment, coordinated the consultation process within the institution, including regular Committee deliberations and regional consultation meetings.⁴ The draft Model Law was debated twice in the PAP plenary and was continuously amended and refined throughout the process. The adoption of this Model Law by the PAP⁵ was historic in several respects:

- Healthy soils are formally recognised as a precondition for sustainable development.
- A legal framework for soil management has been established.
- The framework is designed to be applicable not only to a single state but across an entire continent.

Shortly thereafter, another continent-wide legal framework addressing soil governance was adopted. Following extensive negotiations, the European Union (EU) Directive on Soil Monitoring and Resilience entered into force on 16 December 2025.⁶

The following aims to determine whether and to what extent the Model Law on Soil Management could serve as a benchmark, a toolbox, or even a blueprint for other continents, regions, or states. To this end, the summary begins by explaining the importance of soils for the prosperity and sustainability of societies. The next section

1 See <https://pap.au.int/en/news/press-releases/2025-11-06/african-parliamentarians-adopt-continents-first-model-law>, accessed 11 March 2026, https://www.africanparliamentarynews.com/2025/11/pan-african-parliament-adopts-landmark_7.html, accessed 11 March 2026; Mutingwende (2025a and b).

2 See Ruppel & Ginzky (2021); Ruppel et al. (2025).

3 See Preface to the Model Law, Nr. 3 and Pan-African Parliament (2025a, b and c).

4 See <https://pap.au.int/en/news/press-releases/2025-09-26/pap-analyses-draft-model-law-sustainable-soil-management-africa>, accessed 11 March 2026.

5 See FAO (2025b and c).

6 Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202502360, accessed 11 March 2026.

outlines the key characteristics and specific features of the Model Law on Soil Management, both in its substantive provisions and in its legal design. Subsequently, the core elements of the EU Directive on Soil Monitoring and Resilience will be examined to understand its approach, including its strengths and weaknesses, and to assess its potential relevance for other regions.

2. Importance of fertile/healthy soils for Africa

Soil is the silent, crumbling foundation of global food security and ecological stability. It is as fundamental to the natural environment as plants, animals, rivers, or the climate itself. Soil provides habitat for countless organisms, regulates the flow of water and nutrients, and serves as a reservoir for gases such as oxygen and carbon dioxide. It also functions as a cultural archive, bearing the imprint of human history—from agricultural practices to archaeological remains. In addition, soils represent the second-largest reservoir of carbon after the oceans and are therefore critical for climate mitigation and adaptation. At the same time, soils are increasingly affected by changing weather patterns associated with climate change, including flooding, intense rainfall, and water scarcity. As hosts to immense biodiversity, they are also indispensable to addressing biodiversity loss. In short, soils are both ecological foundations and cultural legacies, forming an intricately balanced system more complex than any machine humankind has ever created.

Healthy soils are also essential for human health and well-being. Soil health is directly linked to human well-being through food production, water filtration, air quality regulation, and its role in adapting to changing climatic patterns. Degraded soils may reduce the nutritional value of crops, limit access to clean water, and increase exposure to contaminants. In addition, healthy soils provide the foundation for green spaces in urban areas, which can improve residents' mental well-being and foster social cohesion. Protecting soil health is therefore not only about preserving nature, but also about safeguarding the well-being of present and future generations.⁷

Soil is equally central to economic prosperity. Healthy soils underpin agricultural productivity, with agriculture accounting for approximately 20% of Africa's per capita gross domestic product (GDP) and employing around 60% of the continent's workforce. Sustainable soil management is thus not only an environmental necessity but also an economic imperative. Well-managed soils can strengthen national economies, enhance agricultural exports, and ensure that economic benefits reach local farmers and rural communities.

At the same time, this finite resource faces unprecedented threats.⁸ To feed a projected global population, food production must increase by 35–56% by 2050—a target

⁷ Ginzky & Ruppel (2025b).

⁸ Hou et al. (2025: 1).

that is increasingly jeopardised by widespread soil degradation.⁹ Meeting this demand on already degraded soils is placing the livelihoods of approximately 1.3 billion people worldwide at risk.¹⁰ According to the Food and Agriculture Organization of the United Nations (FAO), up to 90% of the world's soils may be at risk by mid-century due to erosion, the excessive use of fertilisers and pesticides, industrial pollution, and climate change.¹¹

An estimated one-third of the world's soils are already degraded, resulting in the loss of approximately 75 billion tonnes of arable soil annually and roughly USD 400 billion in lost agricultural production.¹² These figures illustrate not only an ecological crisis but also a profound economic and human development challenge. A significant proportion of the world's irrigated land is already affected by salinity—estimates range from one-fifth to nearly half—particularly in arid and semi-arid regions.¹³ In northern India, salinisation has severely reduced wheat and rice yields.¹⁴ Soil acidification represents another growing threat, particularly in Asia, Europe, and North America, driven by acid rain, the excessive use of nitrogen fertilisers, and intensive agricultural practices.¹⁵ In Europe, inefficient nitrogen management has exacerbated acidification, forcing costly lime applications that provide only temporary stabilisation.¹⁶ Armed conflict has further aggravated soil degradation. Russia's war of aggression against Ukraine has contaminated an estimated one-third of the country's farmland, while the use of white phosphorus munitions has poisoned agricultural soils in southern Lebanon.¹⁷ More broadly, Europe reports that approximately 61% of its soils are unhealthy, primarily due to carbon loss, biodiversity decline, and peatland deterioration.¹⁸

3. The characteristics of the Model Law on Soil Management in Africa

The following section examines the characteristics of the Model Law on Soil Management in Africa, focusing on its substantive features, the categories of provisions it contains, its legal nature, and its genesis and development.

9 Ibid.

10 Ibid.

11 Ibid.

12 See <https://eu.boell.org/en/SoilAtlas-soil-degradation>, accessed 29 September 2025.

13 Heinrich-Böll-Stiftung (2024).

14 Ibid.

15 Ibid.

16 Ibid.

17 Ibid.: 13.

18 Ibid.

3.1. Substantial characteristics of the Model Law on Soil Management in Africa

This subsection outlines the key substantive characteristics of the Model Law on Soil Management in Africa.

3.1.1. Substantial elements

From a substantive perspective, the Model Law on Soil Management in Africa is characterised by five core features.

3.1.1.1. Inclusive governance perspective

The adopted Model Law takes an inclusive approach, addressing the multiple dimensions of soil governance. Traditionally, soil governance focuses primarily on maintaining, restoring, and enhancing soils and their qualities. This is usually achieved through regulating potentially harmful activities, establishing restoration and rehabilitation measures for degraded soils, and creating planning instruments and administrative structures to oversee soil protection.¹⁹ The Model Law on Soil Management in Africa adopts a broader perspective. It addresses additional and often overlooked dimensions of soil governance, including land tenure rights and the role of traditional leaders; the impacts of transnational trade and foreign investment; the use of digital technologies—including artificial intelligence (AI); gender equality; and the importance of indigenous knowledge.²⁰

For instance, Article 8 provides that land laws should be implemented with due consideration of the Model Law. Article 28 highlights the central role of traditional leaders as custodians of sustainable soil management and emphasises the importance of close cooperation between competent authorities and traditional leadership structures. The interaction between sustainable soil management and international trade and investment is addressed in Articles 12 and 13. These provisions stipulate, *inter alia*, that international trade should not negatively affect soil properties, that foreign investors must comply with national legislation, and that foreign investments must not undermine soil health or local land rights. The Model Law also recognises the role of emerging technologies. Article 21 requires the national competent authority to coordinate the effective use of digital tools, including AI, in a manner consistent with guiding principles such as non-discriminatory access. Article 28 further emphasises that indigenous knowledge is a valuable source of information for sustainable soil management

¹⁹ Ginzky (2022).

²⁰ Ginzky & Ruppel (2025a and b).

and calls for mechanisms to collect and make it accessible. In addition, Article 29 establishes that women and men shall enjoy “equal rights in access to, use, and management” of soils, and that gender-specific considerations should be recognised in decision-making processes.

This inclusive approach reflects the broader sustainability principle, which integrates ecological, social, and economic dimensions. By adopting such a perspective, the Model Law underscores the fundamental importance of soils for sustainable development. While addressing the environmental aspects of soil protection and management, the Model Law also emphasises the need to safeguard soils in the interest of human well-being and societal development. In doing so, it promotes economic prosperity, social justice, and equity. By explicitly recognising these social dimensions, the Model Law also strengthens public trust in legal and political institutions to address complex environmental challenges.

The holistic approach adopted by the Model Law on Soil Management in Africa is, therefore, particularly appropriate. Rather than focusing on a single aspect of soil governance, it encompasses the full range of relevant dimensions. Given that the Model Law is intended to guide national legislation in comprehensively organising sustainable soil management, this inclusive approach appears both suitable, practical, and instrumental. It empowers national legislators to address the diverse aspects of soil governance in a coherent, integrated manner, guided by the Model Law’s provisions.

3.1.1.2. Modern understanding of the legal nature of soil

A second characteristic of the Model Law on Soil Management in Africa is its grounding in a modern understanding of soil’s legal nature. Despite the fundamental importance of soils for sustainable development, soil has remained something of a legal orphan in many African jurisdictions. It is frequently subsumed under broader “land” or “environmental” legislation, resulting in fragmented regulatory approaches and often ineffective protection. Given that soils regenerate only over geological timescales, the need for coherent, enforceable governance frameworks grounded in a contemporary understanding of soil is particularly pressing.²¹

Article 5 constitutes the central provision in this regard. Paragraph 1 explicitly states that soil is “a limited and fragile natural resource”. The emphasis on soil as a “natural resource” is significant, as soil has often been treated primarily as an “economic commodity” under the broader legal concept of “land”. By contrast, the Model Law recognises soils as a direct environmental resource that requires dedicated protection. To this end, Article 5(1) provides that soils must be “conserved, maintained and protected against all forms of degradation” to “preserve their ecological,

21 Bodle (2022).

economic, social and cultural services”. This formulation underscores that all forms of soil degradation must be accounted for. Protection, therefore, extends beyond contamination, which has traditionally been the primary focus of soil-related legislation,²² to include other forms of degradation such as erosion, compaction, salinisation, and the loss of organic matter. Article 5(1) further highlights that soils provide multiple services to humans and society, identifying four categories: ecological, economic, social, and cultural services. These categories are further elaborated in the subsequent paragraphs of Article 5. Notably, the inclusion of social services is relatively exceptional in soil-related legislation and reflects a broader recognition of the importance of social justice and equity in achieving sustainable development in Africa.

Finally, Article 5(1) emphasises that the preservation of soil services must be undertaken in the interest of “present and future generations”. This reflects the modern principle of intergenerational equity, highlighting the need to safeguard soil resources for the long-term benefit of both current and future generations.²³

3.1.1.3. Linkage to international strategies, agreements, and processes

The Model Law on Soil Management in Africa is closely connected to a range of international strategies, agreements, and policy processes. In doing so, it clearly demonstrates that it does not operate in isolation but instead takes into account the international obligations and commitments of African states.

The recitals refer, *inter alia*, to the 2015 development agenda, the “Soil Initiative for Africa”, and the “Africa Fertiliser and Soil Health Action Plan”. They also acknowledge the work of international institutions and frameworks²⁴ such as the United Nations Convention to Combat Desertification (UNCCD), the Food and Agriculture Organization of the United Nations (FAO), and the United Nations Environment Programme (UNEP). In addition, the Model Law references key political commitments, including the Maputo Declaration on Agriculture and Food Security (2024) and the Nairobi Declaration on African Fertiliser and Soil Health (2024).

Article 2, entitled “Purpose and Objective of the Law”, identifies achieving “Land Degradation Neutrality” (LDN) as one of its central objectives, reflecting a key target of the 2015 Sustainable Development Agenda.²⁵ As the concept of LDN encompasses both quantitative and qualitative dimensions of land degradation, Article 2 requires states to ensure a neutral balance between ongoing degrading and restoration and/or rehabilitation measures.²⁶ This objective is particularly ambitious, as it essentially

22 Ginzky (2021 and 2022).

23 Rawls (1999: 260); Araújo & Kössler (2021).

24 Ruppel (2022a).

25 Ginzky (2023).

26 Ehlers (2016).

requires maintaining—or improving—the overall condition of soils despite ongoing pressures.

Furthermore, several specific provisions of the Model Law require that relevant international standards and obligations be taken into account or complied with. For example, Article 10(7), which addresses “Soil, Sustainable Agriculture, and Food and Nutrition Security”, emphasises the importance of aligning national measures with relevant international frameworks.

In sum, the Model Law on Soil Management in Africa situates itself within a broader landscape of international strategies, agreements, and policy processes. By doing so, it provides a mechanism through which states may help fulfil their international commitments, whether by implementing or domesticating the Model Law.

3.1.1.4. Modern and innovative regulatory mechanisms and instruments

A third characteristic of the Model Law on Soil Management in Africa is the introduction of modern, innovative regulatory mechanisms and instruments to govern, manage, and promote sustainable soil management.

To begin with, Article 3 establishes an extensive list of legal definitions for terms used throughout the Model Law. This approach, now widely regarded as good legislative practice, enhances legal certainty by clarifying the scope, objectives, and regulatory ambitions of the provisions. Article 6 further sets out a catalogue of “guiding principles” intended to inform the application and interpretation of the Model Law. The provision identifies twelve principles, including accountability, effective participation, precaution, prevention, proportionality, sustainability, and transparency.

Notably, the Model Law places particular emphasis on equity and justice. Two of the guiding principles explicitly address “gender equity and equality” and “non-discrimination and social justice”. In addition, the “Degradation Responsibility Principle” provides that individuals or entities responsible for, or benefiting from, soil degradation should bear the costs of its management and remediation. The principle of “subsidiarity” further requires that decision-making be exercised, where appropriate, at the lowest effective administrative level, while ensuring cooperation between higher levels of administration, including ministries, as well as local communities, traditional authorities, and local governments.

Articles 14 and 15, read together with Article 29(2), establish an important regulatory mechanism to ensure that negative impacts on soils are either prevented, effectively managed, or compensated through soil restoration measures where impacts are unavoidable. To ensure effective implementation, “any use of soil that may pose a risk of significant degradation” requires prior authorisation from the competent authority. Such authorisation may only be granted where “negative impacts on the soil are minimised”, and unavoidable impacts are “equally compensated”. This mechanism directly

contributes to implementing the objective of land degradation neutrality set out in Article 1(2).

To support informed decision-making, Article 23 requires the establishment of “environmental quality standards” addressing all forms of soil degradation. These standards should serve as benchmarks for assessing soil impacts and determining the necessary mitigation or compensation measures.

In particular, the obligation to offset unavoidable impacts through restoration or compensation measures represents an innovative regulatory tool aimed at achieving LDN. The Model Law also introduces two additional mechanisms within the authorisation process that are both novel and significant. First, Article 15 requires the preparation of a specific “Soil Impact Assessment” (SIA) as part of the broader “Environmental Impact Assessment” (EIA) process. This requirement is intended to ensure that the impacts on soils are addressed through a dedicated analytical framework, as experience has shown that soils are often insufficiently considered within conventional EIA procedures.²⁷ The SIA should also recommend case-specific soil management and mitigation measures.

Secondly, Article 29(2) requires competent authorities to assess the implications of proposed activities for gender equality and other forms of vulnerability. The inclusion of such a gender-sensitive assessment represents an important and innovative feature within soil governance frameworks.

Beyond these regulatory procedures governing specific activities or projects, the Model Law on Soil Management in Africa introduces several planning and management instruments to support long-term, strategic soil governance. One such instrument is the “zoning of uses of soils”, provided for in Article 18. This provision allows competent authorities to “divide land into different zones according to the value” of the soil services they provide. Such zoning enables the coordination of soil use with soil quality and ecological value. For example, highly fertile soils should not be permanently sealed for industrial development where alternative land uses are available. A related planning instrument is set out in Article 19, which allows for the establishment of spatial protection mechanisms, including protected areas for soils of particularly high ecological or productive value. These instruments empower public authorities to manage soil resources in a coordinated and long-term manner. Furthermore, the Model Law requires the identification and dissemination of “good practices for sustainable uses of soil”. These practices are to be compiled and made publicly accessible by publication in a “national soil information system”, thereby promoting knowledge sharing and capacity building.

Finally, the Model Law adopts a sector-specific regulatory approach to address the cross-cutting nature of soil governance. It introduces tailored requirements and obligations for sectors such as agriculture and food security (Article 10), climate mitigation

27 See the country studies in Ruppel et al. (2025).

and adaptation (Article 11), mining (Article 17), and urban development (Article 20). By integrating soil protection considerations into these key sectors, the Model Law provides a comprehensive regulatory framework to address the complex, interconnected challenges of sustainable soil management.

3.1.1.5. Focus on ensuring effective implementation and enforcement

Another important characteristic of the Model Law on Soil Management in Africa is its strong focus on enabling African states to establish effective mechanisms for implementing and enforcing its substantive provisions. This emphasis reflects a widely recognised challenge in many jurisdictions: while environmental legislation is often well designed in substantive terms, implementation and enforcement frequently remain weak.²⁸ Without effective implementation, even the most carefully crafted legal provisions remain largely symbolic, failing to translate into tangible improvements on the ground or to benefit affected people and communities.²⁹

Effective environmental administration depends fundamentally on reliable data and information. As the well-known principle suggests: “What you do not measure, you cannot regulate.” Article 21, therefore, establishes a comprehensive framework for data management and monitoring. The provision identifies three key processes: the collection of soil data, the assessment and analysis of such data, and its dissemination. Article 21(3) further clarifies that soil data should include information on soil quality, soil use, and tenure rights. The provision also delineates the responsibilities of different administrative levels for these processes. Transparency and public access to information are important components of this framework. It is widely recognised that soil data should be publicly accessible. Accordingly, Articles 25 and 26 require public authorities to ensure effective public participation in decision-making processes and to undertake measures to raise awareness and sensitise the public to soil-related issues.

Parts VI and VII of the Model Law further establish the organisational and institutional framework necessary for effective soil governance, as well as mechanisms for dispute resolution within administrative and judicial proceedings. Pursuant to Article 31(1), a National Soil Management Authority should be established, which is obliged to cooperate closely with regional and local entities. The Model Law explicitly assigns certain responsibilities to this national authority, including the establishment of a national soil database (Article 21(1)), the collection of indigenous knowledge (Article 27(2)), and the submission of draft soil quality standards to the relevant ministry for adoption (Article 23(3)). Where the Model Law refers to the “competent authority”, responsibility should generally lie with regional or local administrative bodies. In addition, Article 31(2) allows the establishment of a Sustainable Soil Management

28 Ginzky & Ruppel (2025b).

29 Ginzky (2022).

Coordination Mechanism, conceived as an intersectoral, multi-stakeholder platform that may perform advisory, consultative, or decision-making functions. Such a mechanism may play an important role in facilitating coordination between different sectors and levels of governance. The specific scope of its responsibilities is to be determined at the national level.

Articles 32 and 33 provide further provisions on monitoring and surveillance, as well as on transnational cooperation within Africa. Monitoring and surveillance mechanisms are essential to ensure compliance with the Model Law and with decisions taken by competent authorities under its framework.

Taken together, these provisions are intended to enable African states to establish effective administrative systems capable of implementing and enforcing sustainable soil management in practice.

3.1.2. The Model Law on Soil Management in Africa and the Commentaries³⁰

Another innovative feature of the Model Law is that it is accompanied by sixteen guidance Commentaries that provide detailed explanations and practical implementation guidance. The legal status of these Commentaries is clarified in the preface of the Model Law, which states: “The Commentaries do not, in themselves, constitute part of this Model Law, but may be of guidance in facilitating its understanding, use, and transposition into domestic legislation.”³¹ Accordingly, the Commentaries do not constitute binding legal provisions but serve as interpretative and practical tools to support the application and domestication of the Model Law. The Commentaries address the following non-conclusive list of topics:

- Awareness Raising and Capacity Building;
- Sustainable Soil Management Practices for Food Production;
- Dispute Settlement;
- Data Management;
- Fertilisers;
- Foreign Investment;
- Gender;
- Implementation and Enforcement;
- Industry, Infrastructure, and Energy Transition;
- Mining;
- Migration;
- Pesticides;
- Pastoralism;
- Urbanisation;

³⁰ See the Commentaries in this book.

³¹ Preface to the Model Law, Nr. 5.

- Tenure Rights; and
- Traditional Leaders.

The Commentaries, therefore, address soil governance in considerably greater detail, whereas the Model Law itself sets out the core principles and provisions in a more general and normative manner. All Commentaries follow a consistent structure. First, the policy challenges associated with the respective topic are outlined. This is followed by an overview of policy options to address these challenges through legislative and administrative measures. Finally, each Commentary provides concrete drafting suggestions or text proposals.

Some Commentaries are directly linked to specific provisions of the Model Law. These include, for example, Commentaries on Article 8 (“Relation to Land Laws”), Article 13 (“Foreign Investments”), Article 17 (“Mining”), and Article 20 (“Soils in Urban Areas”). Other Commentaries address key thematic areas that intersect with soil governance but are only briefly covered in the Model Law itself. This is particularly the case for Commentaries on “Sustainable Soil Management Practices for Food Production”, “Fertilisers”, “Pastoralism”, and “Pesticides”, which address the critical interface between soil health, agriculture, and food security—issues of particular relevance for Africa that are otherwise primarily addressed in Article 10 (“Soil, Sustainable Agriculture, and Food and Nutrition Security”). A further group of Commentaries adopts a more cross-cutting perspective, addressing broader socio-economic and policy dimensions relevant to soil governance. These include, for example, Commentaries on “Industry, Infrastructure, and Energy Transition” and on “Migration”.

Taken together, the Commentaries constitute an extensive toolbox of soil governance options to support national domestication of the Model Law. A distinctive feature of this approach is that the policy options presented in the Commentaries are directly linked to the Model Law’s provisions. They therefore do not constitute purely academic reflections but are closely integrated with the legal framework established by the Model Law. Their common structure further facilitates their practical use by policymakers and legislators. By explicitly emphasising their non-binding character, the Commentaries also clarify the distinction between the Model Law’s legal authority and their explanatory and supportive nature.

Overall, the Commentaries provide a legally integrated “menu” of governance options that may assist states in better understanding the rationale behind the Model Law’s provisions and in selecting context-specific approaches for domestication with regard to topic-specific challenges.

3.2. Different categories of provisions

From the perspective of national domestication, the Model Law’s provisions can be grouped into four categories. Recognising these distinctions can assist national

legislators in organising the domestication process efficiently and in a structured manner. It also illustrates how the Model Law strikes a balance between providing clear regulatory guidance and allowing flexibility and adaptability across different national legal systems.

3.2.1. Category 1: Self-executing, directly implementable

The first category comprises provisions that may be considered self-executing. These provisions could be incorporated directly into national legislation without requiring significant legal refinement or additional regulatory instruments. Once transposed into domestic law, they can be applied immediately. This appears to be the case, *inter alia*, for the following provisions:

- Article 4 – Definitions
- Article 5 – Services of Soils
- Article 6 – Guiding Principles
- Article 7 – Interface with other Sectoral Provisions
- Article 8 – Relation to Land Laws
- Article 14 – Obligation to Minimise and Compensate Detrimental Effects on Soil
- Article 15 – Soil Impact Assessment (SIA) as part of Environmental or Strategic Impact Assessment
- Article 18 – Zoning of Land
- Article 19 – Protection of Particularly Valuable Soil by Spatial Measures
- Article 21 – Data Management and Monitoring
- Article 35 – Criminal Offences, Penalties and Sanctions
- Article 36 – Administrative Offences

Additional provisions may also fall within this category depending on the structure of the respective national legal system and the extent to which supplementary regulations are required.

3.2.2. Category 2: Provisions which need to be contextualised with sectoral provisions

The second category consists of provisions that require contextualisation within existing sectoral legal frameworks. Given that soil governance is inherently cross-cutting, such integration is both necessary and expected.³² The following provisions illustrate this category:

³² Ginzky (2022).

- Article 10 – Soil, Sustainable Agriculture, and Food and Nutrition Security
- Article 11 – Soil and Climate Mitigation and Adaptation
- Article 17 – Mining
- Article 20 – Soil in Urban Areas
- Article 28 – Role of Traditional Leaders
- Article 29 – Gender Equity and Equality

These provisions intersect with policy areas typically regulated by specialised legislation. For instance, Article 10 addresses matters such as fertiliser and pesticide regulation and requires that all agricultural practices be conducted in accordance with sustainable soil management practices (Article 10(8)). In such cases, the effective implementation of the Model Law requires the review and, where necessary, amendment of existing sectoral legislation on fertilisers and/or pesticides. Simply transposing the Model Law's provisions into national legislation would therefore not be sufficient to achieve its objectives. The accompanying Commentaries provide further guidance and policy options to assist legislators in developing appropriate legislative responses within these sectors.

3.2.3. Category 3: The need to undertake administrative actions for its implementation

A third category consists of provisions whose implementation depends primarily on specific administrative actions. Although all legislative provisions ultimately require administrative structures for their implementation, some provisions explicitly require preparatory actions before they can become operational. Examples include:

- Article 23 – Development of Soil Quality Standards
- Article 24 – Good Practices
- Article 27 – Indigenous Knowledge
- Article 32 – Monitoring and Surveillance
- Article 33 – Transnational Cooperation

These provisions require activities such as collecting information, developing standards or guidelines, establishing monitoring systems, or initiating cooperation mechanisms with neighbouring states. Without these preparatory administrative measures, the provisions cannot be effectively implemented.

3.2.4. Category 4: Strategic provisions

The fourth category comprises provisions that require strategic planning, typically through the adoption of long-term strategies, programmes, or comparable policy

instruments. Such provisions cannot be implemented solely through legislative transposition. Examples include:

- Article 22 – Digitalisation and Sustainable Soil Management
- Article 26 – Public Sensitisation and Awareness Raising
- Article 29 – Gender Equity and Equality

These provisions require the development of strategic frameworks that define priorities, timelines, and institutional responsibilities. They may also overlap with the previous categories, as their implementation may require the release of new sectoral legislation, their amendments or the establishment of specific administrative measures.

The Commentaries accompanying the Model Law provide further guidance on these issues and may assist policymakers and legislators in designing appropriate strategic planning instruments.

3.3. Legal nature of the Model Law on Soil Management in Africa

The following subsection examines the legal nature of the Model Law on Soil Management in Africa. Three aspects are addressed. First, the mandate of the PAP is analysed, as it determines the level of legal obligation, if any, of AU member states to domesticate the Model Law. Second, the subsection explains how the Model Law provides sufficient flexibility to allow African states to address their specific legal, institutional, and socio-economic circumstances. Finally, it considers whether and to what extent the Model Law could serve as a basis for developing an international soil treaty at the regional or even global level.

3.3.1. Legal mandate of PAP for issuing a model law and its legal nature

The mandate of the PAP to discuss and adopt model laws derives from three principal legal instruments:

- The Constitutive Act of the African Union, signed by 53 African states and entered into force in May 2001;³³
- the Protocol to the Treaty Establishing the African Economic Community relating to the Pan-African Parliament of March 2001, which entered into force in December 2003;³⁴ and

33 Available at https://au.int/sites/default/files/pages/34873-file-constitutiveact_en.pdf, accessed 11 March 2026.

34 Available at https://au.int/sites/default/files/treaties/36301-treaty-0022_-_protocol_to_the_treaty_establishing_the_african_economic_community_relating_to_the_pan-african_parliament_e.pdf, accessed 11 March 2026.

- the Rules of Procedures of the Pan-African Parliament, as amended in November 2022.

The Constitutive Act recognises the PAP as one of the organs of the AU. Article 17(1) of the Act states that the PAP shall be established “in order to ensure the full participation of African peoples in the development and economic integration of the continent”. The PAP is therefore conceived as a mechanism to enhance democratic participation in decision-making processes at the continental level. The reference to “development and economic integration” is broad, encompassing a wide range of political, economic, and social policy areas.

Article 17(2) of the Constitutive Act further provides that the organisation and functions of the PAP shall be defined in a subsequent protocol. This instrument is the “Protocol to the Treaty Establishing the African Economic Community relating to the Pan-African Parliament” (PAP-Protocol), which builds upon the broader objectives of the “Treaty establishing the African Economic Community.”³⁵ Article 14 of that Treaty contains language similar³⁶ to Article 17 of the Constitutive Act regarding the Parliament’s participatory role.

Article 2 of the PAP Protocol expressly states that the PAP currently exercises only consultative and advisory functions, although “the ultimate aim of the Pan-African Parliament shall be to evolve into an institution with full legislative powers”.

Article 3 of the PAP Protocol further outlines the institution’s objectives. Among other tasks, the PAP is mandated to “facilitate the effective implementation of the policies and objectives (...) of the African Union”, to “encourage good governance, transparency and accountability in the Member States”, and to “contribute to a more prosperous future for the people in Africa by promoting collective self-reliance and economic recovery”. The functions and powers of the PAP are elaborated in Article 11 of the Protocol. The Parliament is empowered to examine, discuss, and express opinions on matters relating to the African Union, and to make recommendations on issues such as promoting good governance and the rule of law. Importantly, Article 11(3) assigns the PAP a role in working towards the harmonisation or coordination of the laws of member states.

The Rules of Procedure of the PAP further elaborate these functions. Rules 4 and 5 specify that the PAP shall facilitate the implementation of the AU’s policies, objectives, and programmes and contribute to the harmonisation and coordination of the member states’ legislation. To fulfil these functions, the Parliament may oversee the

35 Available at https://africanlii.org/en/akn/aa-au/act/treaty/1991/african-economic-community/eng@1991-06-03#chp_III, accessed 11 March 2026. The Treaty was signed in June 1991 and entered into force in July 1994.

36 Para 1 reads as follows: “In order to ensure that the peoples of Africa are fully involved in the economic development and integration of the Continent, there shall be established a Pan-African Parliament.”

implementation of policies, adopt resolutions, and make recommendations on matters relating to the African Union.

None of the relevant legal instruments explicitly refers to the adoption of model laws. However, the mandate to develop such instruments can be derived from the PAP's consultative and advisory role, as well as from its function of promoting the harmonisation and coordination of member states' legislation. In this context, model laws represent one practical mechanism through which the Parliament may formulate policy guidance and support legislative convergence across the continent.

The PAP is currently considering revisions to its founding Protocol that would explicitly recognise the power to propose and adopt model laws. This revised draft emphasises that even under the existing institutional framework, the PAP's advisory mandate is sufficiently broad to enable it to propose and formulate model laws.³⁷

Given the "consultative and advisory" nature of the Parliament's mandate, model laws adopted by the PAP are not legally binding on member states. African member states, therefore, retain discretion regarding whether and how they domesticate a model law, and to what extent they adapt its provisions to their national legal systems.³⁸ Model laws should instead be understood as normative guidance instruments designed to support good governance and to encourage the harmonisation or coordination of national legislation.

The revised Protocol provides a clear definition of this concept, stating that: "Model law refers to uniform legislation proposed for adaptation by a legislative body. The purpose of a model law is to establish a useful framework that enables legislative bodies to have some uniformity in their governance, organisation, and management. It helps institutions to conduct their functions smoothly and effectively discharge their responsibilities."³⁹ In other words, a model law provides a legislative template that national authorities may adapt to their own legal and institutional contexts. The purpose and objectives of the Model Law on Soil Management in Africa are articulated in the instrument itself. Article 2(1) provides that: "The purpose of this Law is to guide and inspire AU Member States in the governance of soil through sustainable soil management." Article 1(2) further specifies its objectives, which include to "[P]rovide rules and mechanisms for the sustainable management of soil to foster sustainable development" and to "[P]rovide a basis or tool for policy guidance of all stakeholders to ensure harmonisation of regulations, policies, and administrative practice for effective and sustainable soil management."

Taken together, these provisions confirm that the Model Law is intended to serve as a guiding framework for national legislation on sustainable soil management. At the same time, it explicitly recognises that member states should take into account their specific national circumstances, institutional capacities, and policy priorities when

37 See <https://pap.au.int/en/legislation>, accessed 11 March 2026.

38 Murray & Ruppel (2025).

39 See <https://pap.au.int/en/legislation>, accessed 11 March 2026.

considering the domestication of its provisions.

3.3.2. Flexible and adaptable for national and local circumstances

The AU comprises five regions and more than fifty member states, each characterised by significant diversity in terms of ecological conditions—particularly soils—levels of economic development, cultural contexts, political systems, legal traditions, and governance challenges. The Model Law on Soil Management in Africa takes this diversity into account by striking a balance between providing clear guidance on key issues that should be considered in the domestication process and allowing sufficient flexibility for national adaptation. More specifically, the Model Law first offers recommendations on core issues that member states should address when developing national soil governance frameworks. Second, it introduces modern and innovative regulatory mechanisms. Third, it proposes institutional arrangements to ensure implementation and enforcement. At the same time, the Model Law preserves sufficient flexibility for each African state to determine which elements are most appropriate in light of its specific legal system, socio-economic context, and policy priorities.

From the outset, it was recognised that the domestication of the Model Law could not be understood as a purely technocratic exercise of legislative transposition. Rather, it is inherently a political process requiring normative decisions about policy priorities and institutional arrangements. Ideally, such decisions should be informed by inclusive, participatory processes that involve a broad range of societal stakeholders.

The Model Law accommodates this need for flexibility in several ways. First, as explained above, it is not legally binding on member states. Second, its provisions are drafted to allow for adaptation across different national legal frameworks and under distinct legal traditions. Finally, the accompanying Commentaries provide policy options and implementation guidance to facilitate context-specific domestication.

3.3.3. The Model Law on Soil Management in Africa: International law at the regional or global level?

In general terms, the Model Law is intended to address soil governance across all African states. In this sense, it may be viewed as a normative instrument operating at the continental level and thus sharing certain characteristics with regional international law. However, the Model Law does not, *per se*, constitute an international treaty or agreement between states. It was prepared, debated, and adopted by the PAP, which comprises parliamentarians from the national parliaments of AU member states.⁴⁰

40 Art 4 of the PAP Protocol.

Consequently, the Model Law represents an initiative of the legislative branch within the AU framework rather than a treaty negotiated and concluded by states.

Furthermore, the Model Law lacks several elements typically associated with international agreements, such as provisions concerning treaty organs, decision-making procedures, ratification and accession mechanisms, or subsidiary rule-making processes.

Nevertheless, the absence of these features does not *ab initio* preclude the possibility that elements of the Model Law could eventually form part of a regional or global international agreement.⁴¹ As demonstrated above, the Model Law addresses the full range of key issues relevant to soil governance and incorporates a variety of innovative regulatory mechanisms and policy instruments. If there were sufficient political will, the substantive provisions of the Model Law could serve as a basis for developing an international treaty on soil governance. Such an instrument would, of course, require the addition of institutional provisions concerning governance structures, decision-making processes, and implementation mechanisms. In this sense, the Model Law on Soil Management in Africa may be regarded as a valuable starting point for the future development of an international legal framework on soil governance.⁴²

4. Characteristics of the drafting process of the Model Law on Soil Management in Africa

The drafting process of the Model Law on Soil Management also exhibits several distinctive characteristics. First, the structure and substantive elements of the Model Law are grounded in extensive legal expertise and a comprehensive analysis of the realities of soil governance across Africa. In 2017 and 2018, two international and interdisciplinary workshops were organised in cooperation with the Regional Programme on Climate Policy and Energy Security of the Konrad Adenauer Foundation, the German Environment Agency, several African universities, and GIZ. These workshops were held in Kampala, Uganda, and Nairobi, Kenya, and focused on soil governance challenges in Africa.⁴³ Building on the outcomes of these two workshops,⁴⁴ the German government funded an exploratory project entitled “Mapping Out Options for a Model Law for Sustainable Soil Management in Africa”. The project included detailed

41 Boer et al. (2016).

42 The International Union for the Conservation of Nature (IUCN) in 2025 adopted a “motion” to work towards an international instrument on soil protection. See <https://iucncongress2025.org/assembly/motions/motion/007>, accessed 11 March 2026; Ruppel & Murray (2025); Ruppel (2024).

43 See <https://www.umweltbundesamt.de/en/international-workshop-kampala-uganda-september>, accessed 11 March 2026; <https://www.umweltbundesamt.de/en/node/71702>, accessed 11 March 2026.

44 Outcome documents of the two workshops are documented in the following webpages: <https://www.umweltbundesamt.de/en/international-workshop-kampala-uganda-september>, accessed 11 March 2026; <https://www.umweltbundesamt.de/en/node/71702>, accessed 11 March 2026.

country studies in Cameroon, Kenya, and Zambia, conducted by teams of African experts. These studies analysed the strengths and weaknesses of existing national legislation and identified potential options for developing a model law on sustainable soil management.⁴⁵ The findings were subsequently presented to the Committee on Rural Economy, Agriculture, Natural Resources and Environment of the PAP. Based on this work, the PAP in 2023 decided to initiate the development of a model law on soil management.⁴⁶ By the end of 2024, eleven additional country studies had been prepared or updated to ensure broad regional representation across the continental north, south, east, and west, as well as the central part, and one island state. New studies were conducted for Burkina Faso, Botswana, Madagascar, Morocco, Mozambique, Namibia, Uganda, and South Africa, while the earlier studies for Cameroon, Kenya, and Zambia were updated.⁴⁷ These analyses, together with scientific insights from the seven volumes of the “International Yearbook of Soil Law and Policy”,⁴⁸ formed, among others,⁴⁹ an intellectual foundation for the drafting of the Model Law.

Second, the drafting process followed a strongly interdisciplinary, consultative, and participatory approach. The African Soil Partnership closely followed the process and contributed expertise from a soil science perspective. Additional soil experts were involved throughout the drafting process. International organisations such as FAO, UNCCD, and UNEP supported the initiative, provided technical input, and monitored its development.⁵⁰ Several civil society consultations and meetings with high-level representatives of national governments were organised to better understand local challenges and policy priorities, and to gather feedback on proposed regulatory

45 Ruppel & Ginzky (2021); Ruppel et al. (2025).

46 Pan-African Parliament, Resolution on the Development of a Model Legislation on Sustainable Soil Management in Africa, 2023.

47 Ruppel et al. (2025). The German government again funded this process.

48 See Ginzky, H., I.L. Heuser, T. Qin, O.C. Ruppel & P. Wegerdt (eds), 2017, *International Yearbook of Soil Law and Policy 2016*. Cham: Springer International Publishing; Ginzky, H., E. Dooley, I.L. Heuser, E. Kasimbazi, T. Markus & T. Qin (eds), 2018, *International Yearbook of Soil Law and Policy 2017*. Cham: Springer International Publishing; Ginzky, H., E. Dooley, I.L. Heuser, E. Kasimbazi, T. Markus & T. Qin (eds), 2019, *International Yearbook of Soil Law and Policy 2018*. Cham: Springer International Publishing; Ginzky, H., E. Dooley, I.L. Heuser, E. Kasimbazi, R. Kibugi, T. Markus, T. Qin & O.C. Ruppel (eds), 2021, *International Yearbook of Soil Law and Policy 2019*. Cham: Springer International Publishing; Ginzky, H., E. Dooley, I.L. Heuser, P. Kameri-Mbote, R. Kibugi, T. Markus & O.C. Ruppel (eds), 2022, *International Yearbook of Soil Law and Policy 2020/2021*. Cham: Springer International Publishing; Ginzky, H., F. De Andrade Corrêa, E. Dooley, I.L. Heuser, P. Kameri-Mbote, R. Kibugi & O.C. Ruppel (eds), 2024, *International Yearbook of Soil Law and Policy 2022*. Cham: Springer International Publishing; Ginzky, H., D. Grinlinton, I.L. Heuser, P. Kameri-Mbote, A. Khatibi, N. Rodriguez-Eugenio & O.C. Ruppel (eds), 2026, *International Yearbook of Soil Law and Policy 2025*. Cham: Springer International Publishing.

49 Such as the Journal for Soil Security, cf. <https://www.sciencedirect.com/journal/soil-security>, accessed 11 March 2026.

50 These international organisations provided letters of intent to express their support for the project. Their continuous support is also documented by respective forewords in this book.

concepts.⁵¹ Through this iterative and participatory process, the draft Model Law was progressively refined and aligned with practical realities on the ground.

Third, the PAP itself served as the central “driving force” throughout the process. The Parliament regularly requested information on the progress of the drafting work and issued recommendations concerning the design and focus of the analytical studies following its decision to pursue the development of the Model Law. The PAP also concluded a “Memorandum of Understanding” with the two institutions responsible for drafting the Model Law: The Development and Rule of Law Programme (DROP) at Stellenbosch University, South Africa and the German Environment Agency.⁵² Furthermore, the PAP—through its Committee on Rural Economy, Agriculture, Natural Resources, and Environment—co-organised two regional consultations with DROP following the Parliament’s endorsement of the first draft of the Model Law in June 2025.⁵³ These consultations took place in Midrand, South Africa, in July and September 2025 and in Cairo, Egypt, in October 2025. The Committee subsequently submitted the final draft to the PAP, which formally adopted the Model Law on 6 November 2025.⁵⁴

Four factors appear to have been central to the Model Law’s successful adoption. First, the strong sense of “ownership” exercised by the Committee on Rural Economy, Agriculture, Natural Resources, and Environment throughout the entire process. Second, the rigorous scientific analysis of soil governance challenges and of existing legal frameworks across Africa, including a detailed assessment of the strengths and weaknesses of national legislation. Third, the highly consultative and participatory nature of the drafting process, which ensured that diverse perspectives and expertise were incorporated into the final instrument.⁵⁵ Fourth, the close partnership among the leading institutions and, particularly, their competent representatives.⁵⁶

5. Core elements of the EU-Soil Monitoring and Resilience Directive

The EU also adopted legislation addressing soil governance by the end of 2025. The legal nature of this legislation, as well as its core elements, must be examined to enable meaningful comparison between the two legislative approaches.

51 Ruppel et al. (2025).

52 Memorandum of Understanding of 2020.

53 See <https://spikedmedia.co.zw/pan-african-parliament-committee-discusses-model-law-on-soil-a-milestone-for-climate-and-agricultural-justice/>, accessed 11 March 2026.

54 Cf. <https://pap.au.int/en/news/press-releases/2025-11-06/african-parliamentarians-adopt-continents-first-model-law>, accessed 11 March 2026.

55 Cf. also <https://www.fao.org/policy-support/news/detail/pan-african-parliament-breaks-new-ground-with-landmark-soil-and-gender-laws/en>, accessed 11 March 2026.

56 See <https://spikedmedia.co.zw/pap-adoption-of-model-law-on-sustainable-soil-management-step-toward-food-security-and-climate-resilience/>, accessed 11 March 2026.

The EU's soil legislation emerged from a similarly extended policy process.⁵⁷ On 17 November 2021, the EU Commission published the "Soil Strategy"⁵⁸ as one of the essential pillars of the EU Biodiversity Strategy.⁵⁹ The core ambition of the Soil Strategy is to achieve "healthy soils" across the EU by 2050. The strategy also envisaged adopting a legislative instrument as one of the key mechanisms to achieve this objective. Subsequently, on 5 July 2023, the EU Commission published the "Proposal for a Directive of the European Parliament and of the Council on Soil Monitoring and Resilience".⁶⁰ Following extensive discussions amongst the Commission, the Council and the European Parliament, the Soil Monitoring and Resilience Directive⁶¹ entered into force on 16 December 2025.⁶²

Under Article 191 et seq. of the Treaty on the Functioning of the European Union (TFEU),⁶³ the EU possesses competence to adopt legislation in the field of environmental protection. Article 288 of the TFEU distinguishes between different categories of legislative instruments. While a regulation is binding in "its entity" and "directly applicable in all Member States", a directive is binding only with regard to the objectives to be achieved, leaving member states discretion regarding the "form and methods" used to achieve those objectives. Consequently, directives must be transposed into the domestic legal system of member states.⁶⁴ Each directive specifies its own transposition deadline. Article 26(1) of the Soil Monitoring Directive provides that "Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 17 December 2028." If a member state fails to fulfil these obligations, the European Commission may initiate "treaty

57 Ginzky & Pieper (2025); Heuser & Itey (2021).

58 EU Soil Strategy for 2030 – Reaping the Benefits of Healthy Soils for People, Food, Nature and Climate. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. COM/2021/699 Final. Available at <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021DC0699>, accessed 11 March 2026.

59 EU Biodiversity Strategy for 2030 – Bringing Nature Back into Our Lives. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. COM/2020/380 Final. Available at <https://data.europa.eu/doi/10.2779/677548>, accessed 11 March 2026.

60 Proposal for a Directive of the European Parliament and of the Council on Soil Monitoring and Resilience (Soil Monitoring Law). COM/2023/416 Final. 5.7.2023. Available at <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52023PC0416>, accessed 11 March 2026.

61 Directive 2025/2360 of the European Union and the Council of 12 November 2025 on Soil Monitoring and Resilience - (Soil Monitoring Law). Available at https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:L_202502360, accessed 11 March 2026.

62 See <https://www.europeansoilpartnership.org/news-page/european-parliament-adopts-first-ever-soil-monitoring-law>, accessed 11 March 2026.

63 Available at https://eur-lex.europa.eu/resource.html?uri=cellar:2bf140bf-a3f8-4ab2-b506-fd71826e6da6.0023.02/DOC_2&format=PDF, accessed 11 March 2026.

64 Ginzky (2021).

violation proceedings” before the European Court of Justice, which may ultimately lead to financial penalties.⁶⁵ Article 1 of the Directive outlines its central objectives:

The objectives of this Directive are to establish a solid and coherent soil monitoring framework for all soils across the Union, to reduce soil contamination to levels no longer considered harmful to human health and the environment, to continuously improve soil health in the Union, to maintain soils in a healthy condition and to prevent and address all aspects of soil degradation, with a view to achieving healthy soils by 2050 so that they can provide multiple ecosystem services on a scale sufficient to meet environmental, societal and economic needs, prevent and mitigate the impacts of climate change and biodiversity loss, and increase resilience against natural disasters and in terms of food security.

In essence, the Directive pursues three principal objectives:

- The establishment of a comprehensive monitoring and assessment framework for soils across the EU;
- the implementation of measures to improve soil resilience; and
- the management of contaminated sites.

The overarching aim is to achieve “healthy soils by 2025”, enabling soils to provide ecosystem services necessary to meet environmental, social, and economic needs. The recitals of the Directive, which provide the legislative justification and interpretive context for EU acts, make clear that the instrument’s primary focus is on establishing a monitoring and assessment framework.⁶⁶ In this regard, the Directive prioritises the systematic collection and evaluation of information on soil conditions across the Union. Importantly, the Directive does not impose direct obligations on landowners or land users to undertake remediation or resilience measures. Instead, Articles 11 and 12 primarily require member states to provide information and guidance to landowners and land users on measures that may improve soil resilience, and to promote further research and knowledge development.⁶⁷

Part IV of the Directive establishes a structured framework for managing contaminated sites. The approach consists of several stages: identification of potentially contaminated sites; investigation of these sites; site-specific risk assessment; and implementation of appropriate management measures. Many EU member states already apply similar regulatory approaches. The Directive seeks to harmonise these practices across the Union. However, Part IV addresses only one specific form of soil degradation: contamination. Other forms of soil degradation—such as erosion, compaction, salinisation, or loss of organic matter—are not directly regulated through this part of the Directive. An important procedural innovation is the introduction of formal requirements for public participation. Throughout the process—from the identification of potentially contaminated sites to their final management—member states must ensure public consultation and participation (Article 13(3)–(4)). For the purposes hereof, particular attention must be given to the Directive’s conceptual approach to monitoring

⁶⁵ Kassner & Ruppel (2025).

⁶⁶ Part 2 of the Directive.

⁶⁷ Ginzky & Pieper (2025).

and assessing soil health, as these elements may offer valuable benchmarks for soil governance in other regions. Part II of the Directive contains the core provisions on monitoring and assessment. Member states are required to establish soil districts and soil units, which serve as the spatial reference framework for monitoring activities (Article 4).

The Directive provides detailed methodological guidance for the monitoring process. Monitoring and assessment must be based on soil descriptors, indicators used to assess soil conditions. Notably, these soil descriptors address all major forms of soil degradation, as listed in Annex I. In this respect, the Directive adopts a modern and comprehensive approach, as it avoids focusing exclusively on a single form of soil degradation, unlike in Germany, for example.⁶⁸ Instead, monitoring systems must capture the full range of soil degradation processes.⁶⁹ Article 6(3) introduces two important categories of reference values for assessing soil health, namely non-binding sustainable target values and operational trigger values.

For certain soil descriptors, non-binding sustainable target values are already specified in Annex 1, Part A. For other descriptors listed in Annex 1, Part B, as well as for operational trigger values, member states are responsible for establishing appropriate thresholds. According to Article 10(5), soils are considered to be in a healthy condition if the non-binding sustainable target values are not exceeded. Operational trigger values are intended to signal situations in which soil conditions are at moderate or poor levels and therefore require intervention. These operational trigger values are designed to guide the implementation of measures to improve soil resilience under Articles 11 and 12.

The Commission's proposal for the Soil Monitoring Law in July 2023 was widely criticised for failing to impose stronger obligations on member states to implement the measures necessary to achieve healthy soils.⁷⁰ Compared with other EU environmental instruments—such as the Water Framework Directive (2000)—the Soil Monitoring Directive is considered relatively weak in terms of binding regulatory requirements.⁷¹ However, the Directive includes a review clause after 6 years that allows the Commission to revise the instrument in light of data collected through the monitoring system and to consider additional mechanisms to improve the soil quality. The political context in which the Directive was adopted must also be taken into account.⁷² Achieving consensus among EU Member States on soil governance has historically been difficult.

Despite these limitations, the Directive nevertheless represents an important advancement in soil governance in two respects. First, by addressing all major forms of soil degradation, the monitoring framework adopts a comprehensive, holistic approach

68 Ginzky (2024).

69 Ginzky & Pieper (2025); Kassner & Ruppel (2025).

70 Ginzky & Pieper (2025); Heuser & Itey (2021).

71 Ginzky & Pieper (2025).

72 See, for example: https://www.martin-haeusling.eu/images/Briefing_RL_Boden%C3%BCberwachung_und_resilienz_Martin_H%C3%A4usling.2pdf_en-GB.pdf, accessed 11 March 2026.

to collecting soil data and assessing soil health across the EU. Second, the introduction of non-binding sustainable target values and operational trigger values constitutes a significant governance innovation. Although these are not legally binding, they will carry considerable normative authority. They are expected to be developed through scientifically informed, consultative processes, using agreed methodologies and adopted by legitimate governmental institutions. Once established, these values will serve as benchmarks for assessing soil health and identifying the need for measures to improve soil resilience. In this way, the Directive may indirectly stimulate stronger soil governance in practice, even though its formal regulatory obligations remain limited.⁷³

6. Lessons learnt

Having analysed the key characteristics of the Model Law on Soil Management in Africa, outlined the drafting process, and examined the conceptual approach of the European Soil Monitoring and Resilience Directive, the following section assesses whether, and to what extent, the African Model Law could serve as a blueprint, a benchmark or a toolbox for other states, regions, or continents. As a starting point, it is necessary to consider whether soil governance poses a challenge comparable to that faced by other regions of the world.⁷⁴

6.1. Soil governance – a global challenge

Healthy soils are a precondition for sustainable development, as shown above. The following describes the soil conditions in Latin America and South America, as well as in India, to underscore the urgency of effective soil governance.

6.1.1. Latin and South America

Healthy soils are central to reconciling food security, climate change mitigation and adaptation, and human health. In Latin America and the Caribbean (LAC), this linkage is especially urgent: soil degradation is driven by unsustainable land use and management, deforestation and forest disturbance (including logging and fires), biodiversity loss, erosion, and high vulnerability to climate change.⁷⁵ Erosion alone threatens nearly 20% of the region's soils, with Argentina (25 million hectares), Mexico (19% of its

⁷³ Heuser & Itey (2021).

⁷⁴ Ruppel & Murray (2025). Rodi et al. (2025); Ruppel (2025); Schnedl et al. (2024).

⁷⁵ Poppiel et al. (2025).

territory), El Salvador (75%), Cuba (43%), Ecuador (50%), and Uruguay (30%) facing particularly acute pressures.⁷⁶ Desertification compounds these risks, affecting 12% of Guatemala, 17% of Colombia, 28% of Ecuador, and up to 62% of Chile.⁷⁷ Across the region, desertification affects 35% of the land—approximately 6.9 million km²—while in humid zones, deforestation is the dominant driver, already impacting 1.3 million km² (6.5% of the territory).⁷⁸ Almost half of LAC's land (49%) is vulnerable to water erosion, and more than half (56%) is affected by chemical degradation, including acidity and salinity.⁷⁹

Climate change intensifies these pressures by reshaping agriculture itself: expanding pest and disease risks, altering water availability, shifting cropping cycles, and disrupting prevailing farm models. Climate shocks are already deepening poverty and inequality in rural areas, with disproportionate impacts on women. In an average year, poor rural households lose about 5% of their total income due to heat stress and 4.4% due to floods relative to better-off households.⁸⁰ These shocks also widen structural inequalities: floods increase the income gap between poor and non-poor households by approximately USD 21 billion annually, while heat stress contributes over USD 20 billion.⁸¹ Gender disparities are particularly pronounced. Female-headed households experience income losses that are 8% higher from heat stress and 3% higher from floods compared to male-headed households.⁸² In aggregate terms, this translates into annual income losses of about USD 37 billion due to heat and USD 16 billion due to floods for women in low- and middle-income countries. Looking ahead, climate change is expected to further exacerbate these inequalities: a 1°C increase in long-term average temperatures is associated with a 34% greater reduction in total incomes for female-headed households relative to male-headed households.⁸³ The stakes are both ecological and economic: 93% of LAC's economic activities depend directly on soils, three-quarters of which are already degraded, resulting in annual production losses of around USD 60 billion.⁸⁴

6.1.2. India

Healthy soils are central to reconciling food security with climate change mitigation and adaptation, and to supporting rural livelihoods. In India, this linkage is especially

76 Montaña-Lopez et al. (2021: 615).

77 Ibid.

78 Ibid.: 617.

79 Ibid.

80 FAO (2024: 21).

81 Ibid.: 23.

82 Ibid.: 27.

83 Ibid.: 30.

84 See <https://www.fao.org/americas/news/news-detail/suelos-en-riesgo/en>, accessed 4 April 2026.

acute: the country supports nearly 18% of the world's population with just 2.4% of global land area.⁸⁵ Soil degradation—particularly water erosion—threatens the foundation of its agrarian economy.⁸⁶ The annual soil loss rate is estimated at 15.35 tonnes per hectare per year, stripping 5.37–8.4 million tonnes of nutrients, reducing crop productivity and contributing to floods, droughts, biodiversity loss, and a 1–2% decline in reservoir capacity annually. Major rainfed crops alone suffer an annual production loss of 13.4 million tonnes, valued at ₹205.32 billion. The ecological consequences are equally severe: nutrient-laden runoff pollutes rivers and groundwater, undermines freshwater biodiversity, and accelerates the release of carbon dioxide from decomposed organic matter, thereby aggravating climate change.

Land degradation in India spans 53 to 188 million hectares, depending on the definition, with erosion and vegetation loss as the primary drivers. Small and marginal farmers, who are most vulnerable to climate shocks and insecure tenure, bear the brunt of these impacts. Climate change will intensify pressures: projections suggest that by 2050, a 10% increase in rainfall intensity could lead to a 20% increase in rainfall erosivity, while soil loss from croplands could rise by 1.5% for every 1% increase in rainfall intensity.⁸⁷ These dynamics will deepen food, livelihood, and environmental insecurity in an already land-hungry agrarian economy.

6.1.3. Conclusion

Similar conclusions could be drawn for most regions of the world.⁸⁸ Globally, societies urgently require stronger and more effective soil governance to maintain—and, where possible, enhance—the services that soils provide for humanity, both now and in the future. Given this urgent need for improved soil governance frameworks, the question arises: whether and how the Model Law on Soil Management in Africa could serve as a blueprint, benchmark, or toolbox for other states, regions, or continents. Although the Model Law contains many innovative conceptual approaches, it should not be regarded as a blueprint for soil governance to be literally transposed into national legislation elsewhere. First, the Model Law was never intended to be directly implemented. Rather, it functions as a model framework and a compilation of regulatory options. Even within Africa, its provisions must be adapted to national conditions, institutional structures, and policy priorities. Second, the Model Law is grounded in a detailed analysis of African legal frameworks and governance challenges. Conditions, institutional capacities, and legal traditions in other regions may differ significantly.

85 Desai (2023: 3).

86 Bhattacharyya et al. (2015).

87 Bhattacharyya et al. (2023).

88 Ruppel et al. (2025); Ruppel & Ginzky (2021); Ginzky (2022); Schnedl (2025); Kameoka & Takahashi (2025).

Nevertheless, the Model Law can serve as both a benchmark and a toolbox for developing soil governance frameworks elsewhere.

As discussed above, the Model Law adopts a comprehensive and inclusive approach to soil governance. It addresses not only the maintenance and enhancement of soil quality but also related issues, including land tenure systems, foreign investment, international trade, gender equality, digitalisation,⁸⁹ and the role of indigenous knowledge. In this respect, the Model Law may serve as a benchmark by illustrating the wide range of policy areas to consider when designing national legislation on soil governance. Another important benchmark is the Model Law's modern understanding of soil as a natural resource that provides multiple services to society, including ecological, economic, social, and cultural services. Using this conceptual framework as the starting point for soil legislation may help policymakers and societies to recognise the fundamental importance of soils for sustainable development.

The approach of the African Model Law—designed as a framework applicable across an entire continent—may also be relevant to large federal states or regions comprising multiple jurisdictions, where overarching legislative frameworks must accommodate substantial internal diversity.

The Model Law may also serve as a toolbox of regulatory instruments. Several of its mechanisms could be adapted and incorporated into soil governance frameworks elsewhere. These include, *inter alia*: soil impact assessment procedures; obligations to minimise and compensate detrimental effects on soils; gender impact assessment; the integration of the principle of land degradation neutrality; zoning approaches for soil uses; and spatial planning mechanisms for the protection of particularly valuable soils.

Similarly, the provisions concerning the establishment of effective administrative structures—such as national soil information systems and coordinated mechanisms—provide a useful conceptual foundation for ensuring effective implementation and enforcement.

In addition to its substantive provisions, the Model Law also offers three important procedural benchmarks:

- First, the drafting process was based on rigorous legal analysis and extensive stakeholder consultations, involving experts from multiple disciplines and ensuring broad regional representation.
- Second, the process was guided throughout by a politically legitimate institution—the Pan-African Parliament—which provided institutional leadership and oversight.
- Third, the Model Law is accompanied by extensive Commentaries, which provide contextual explanations and additional regulatory options. These Commentaries facilitate the interpretation and adaptation of the Model Law and may serve as a valuable tool for legislators and policymakers. Such

89 Ginzky & Ruppel (2025a).

accompanying explanatory materials could be particularly useful when developing framework legislation for regions or continents.

The Model Law shall also be made available in four official languages of the AU: English, French, Arabic, and Portuguese, thereby facilitating its accessibility and potential use across a wide range of countries.

Taken together, the Model Law represents a significant contribution to global soil governance. It functions not as binding legislation but as a non-prescriptive template that can guide national and regional soil governance initiatives. Where states wish to domesticate elements of the Model Law, a stepwise approach may be particularly effective and could include the following components:

- Conducting a diagnostic assessment of national soil governance gaps through comparative legal analysis and multi-stakeholder consultations involving farmers, customary authorities or indigenous peoples, local governments, industry representatives, and scientists;
- developing a core legislative framework anchored in key law principles, such as those entailed in Article 6 of the Model Law, *inter alia*, prevention, precaution, and the polluter-pays principle, while adapting relevant policy options from the Model Law's Commentaries;
- establishing institutional arrangements for implementation, including clearly defined mandates across ministries, a national soil information system, and transparent monitoring and reporting mechanisms;
- ensuring effective enforcement through a coordinating authority working in cooperation with traditional and indigenous governance structures, supported by accessible dispute-resolution mechanisms and proportionate sanctions.

Different modes of uptake are possible. Some countries may adopt specific regulatory mechanisms—such as soil impact assessments or restoration obligations—while others may focus on broader policy areas, such as gender equality, mining governance, or soil data management. In addition, the co-production process used to develop the Model Law—characterised by scientific research, stakeholder participation, and institutional leadership—may serve as a replicable model for other regions. In this sense, the Model Law may function as both a benchmark and a toolbox, not only in terms of its substantive provisions but also in its participatory and interdisciplinary drafting process.

With respect to the development of a future international instrument on soil governance—such as a treaty, convention, or protocol—the Model Law may even be regarded as a potential blueprint. Apart from additional provisions concerning institutional arrangements, subsidiary rulemaking, compliance mechanisms, and dispute settlement, the Model Law already addresses the principal dimensions of soil governance and provides detailed regulatory mechanisms. Its provisions could therefore serve as a starting point for translating soil governance concepts, mechanisms, and instruments

into the structure of an international legal instrument, either at the regional or at the global level.⁹⁰

6.2. What may need to be added?

Two elements are particularly critical for effective soil governance. The first is the systematic gathering of soil data and assessment of soil health, including chemical, physical, and biological indicators. The second is the development of environmental quality standards that provide benchmarks for determining acceptable soil conditions and identifying the need for management measures. Both aspects are addressed in the African Model Law, notably in Articles 21 (“Data Management and Monitoring”) and 23 (“Development of Soil Quality Standards”).

However, the EU Soil Monitoring and Resilience Directive provides a more detailed and operational framework in this regard. The Directive specifies, *inter alia*, the establishment of spatial reference units for monitoring; clearly defined soil descriptors and indicators for soil health across all forms of soil degradation; and detailed methodologies for sampling, including the locations, numbers, and frequencies of measurements. Similarly, the Directive provides a more structured approach to soil quality standards by introducing two categories of reference values: sustainable target values, which indicate healthy soil conditions; and operational trigger values, which indicate the need for management measures to improve soil quality. The Directive also specifies the indicators to be used for assessing different forms of soil degradation.

Given the importance of these elements for effective soil governance, other states, regions, or continents may consider the EU Soil Monitoring Directive as an additional benchmark or tool in the toolbox, complementing the broader governance framework offered by the African Model Law.

7. Summary and outlook

It has been demonstrated that the Model Law on Soil Management in Africa can serve as a highly relevant benchmark and toolbox for developing soil governance frameworks across other continents, regions, and states. In particular, regarding the collection of soil data, the assessment of soil health, and the development of soil quality standards, the EU Soil Monitoring and Resilience Directive offers additional insights that may complement the Model Law’s broader governance approach.

However, neither the African Model Law nor the EU Soil Monitoring Directive should be regarded as a blueprint for soil governance. Local adaptation will, in any

90 See Ruppel & Murray (2025).

case, be necessary and must begin with a thorough analysis of existing legislation, institutional capacities, and the specific challenges faced at the national or regional level.

The domestication of the Model Law will take place within African states. It will therefore be important to document and assess the experience emerging from these domestication processes. Such assessments may generate two valuable outcomes. First, they could serve as the basis for developing a generic guidance framework on the domestication of the Model Law for Soil Management in Africa. Second, they may provide insights that could inform future refinements and adjustments of the Model Law itself.

The adoption of the Model Law represented a significant milestone in the development of global soil governance and may even be considered a historic step. However, its true impact will depend on the success of its domestication and implementation. Effective national adaptation will be essential to translate the Model Law's principles into tangible on-the-ground improvements and to enhance the well-being of communities that depend on healthy soils. While the initial focus of domestication will necessarily be in Africa, the Model Law's conceptual foundations and regulatory innovations may also offer valuable insights for the broader international community. Soil governance must never be viewed through a "one-size-fits-all lens" but rather understood as an evolving process of learning, adaptation, and continuous improvement.