

Executive summary

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1 The project

The project *Sustainable soil management in Africa – Mapping out options for model legislation* aimed to make proposals for improving legal provisions for sustainable soil management in Africa.

1.1 Preparatory work

The project was based on numerous preliminary studies by the DROP Institute (Development and Rule of Law Programme) at Stellenbosch University in South Africa and the German Federal Environment Agency (UBA). These included various workshops on soil protection governance in Africa and India, which UBA organised with local partners, of which two were the Konrad Adenauer Foundation¹ and Gesellschaft für Internationale Zusammenarbeit (GIZ). The workshops took place in Kampala, Uganda, in 2017;² Nairobi, Kenya, in 2018;³ and New Delhi, India, in 2019.

Furthermore, UBA had already introduced the *International yearbook of soil law and policy 2015* (IYSLP).⁴ So far, that is until mid-2020, three volumes of IYSLP have been published by Springer;⁵ Volume 4 is forthcoming in March 2021 and Volume 5 is already in preparation. IYSLP has created a platform for discussions on soil protection issues at national, regional and international level. At the same time, networking with numerous experts worldwide has been made possible. In the run-up to the project discussed here, UBA also commissioned numerous research projects on legal issues relating to the implementation of the Sustainability Development Goal of land degradation neutrality, and another on updating of international soil protection governance.

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- 1 For a summarising report of the workshop see <https://bit.ly/3qZQUtT>, accessed 28 January 2021.
 - 2 See <https://bit.ly/36ldijI>, accessed 28 January 2021.
 - 3 See <https://bit.ly/36kAdf7>, accessed 28 January 2021.
 - 4 See <https://www.umweltbundesamt.de/en/topics/international-yearbook-of-soil-law-policy>, accessed 28 January 2021.
 - 5 See <https://www.springer.com/series/15378>.

1.2 Project design

The project *Mapping out options for model legislation for sustainable soil management in Africa*, financed by the German Federal Ministry for Economic Cooperation and Development (BMZ) through GIZ, aimed at developing options for a model law for soil protection in Africa – which can and should then be taken up for further consideration by individual member states of the African Union, depending on their needs and taking into account the existing legal situation.

The project was carried out by the DROP Institute at Stellenbosch University, South Africa, from December 2018 to the end of April 2020 with the support of UBA. DROP and UBA successfully teamed up as project partners.

The project followed the approach that both the essential foundations and the political initiative should be contributed by African actors (bottom-up, integrated and inclusive). Firstly, African experts were therefore asked to prepare three country studies – in Cameroon, Kenya and Zambia (see the three chapters) on their respective applicable legislation, taking into account the main drivers of land degradation.

For each of these countries, a team of experts was formed, consisting of a lead author with an academic background, supported by a contributing author from the administration to ensure a practical view, and a research assistant for each of the teams. The lead authors were:

- Prof Dr Patricia Kameri-Mbote, Professor of Law; Former Dean, School of Law, University of Nairobi, Kenya.
- Dr Pamela Towela Sambo, Head of Department, Private Law; immediate past Assistant Dean (Undergraduate), School of Law, University of Zambia.
- Prof Dr Christopher Funwile Tamasang, Associate Professor; Vice-Dean in charge of Research and Cooperation, Faculty of Laws and Political Science, University of Yaoundé II, Cameroon.

On the basis of the results of the three country studies and taking into account findings from other scientific publications, including the *International yearbook of soil law and policy*, options were compiled for establishing an effective legal regime for sustainable soil management in Africa. The detailed set of options can be found in the chapter *Mapping out options for model legislation for sustainable soil management in Africa* by Patricia Kameri-Mbote, Christopher F. Tamasang, Pamela Sambo, Harald Ginzky and Oliver C. Ruppel in this volume.

1.3 Selection of project countries

The selection of the three project countries was based on the following criteria, among others: Geographical representation; different levels of economic development; several key drivers of soil degradation; anglo- and francophone official languages and

legal tradition; available legal expertise; and project implementation (resources – project management).

1.4 Processing method

The project followed a bottom-up, interdisciplinary and participatory approach. The aim was that the findings and recommendations were mainly elaborated upon by African experts with different expertise, experience and perspectives, and with the wider participation of civil society. The main findings and recommendations were to be generated on the basis of scientific studies by African experts (country studies). The involvement of representatives from various national ministries also directly linked the project to political actors.

In the course of the project phase, the writing team met at four different locations across the continent: in March 2019 in Johannesburg, South Africa; in May 2019 in Nairobi, Kenya; in September 2019 in Lusaka, Zambia; and in February 2020 in Accra, Ghana. This meant that the majority of the sub-Saharan African regions of the Pan-African Parliament were represented – namely Southern, Eastern, Western and Central Africa. All these writing team meetings were held with representatives from academia, administration, business, politics, and civil society. Apart from the core writing exercise, the purpose of the events was to consultatively inform about the project, to raise awareness of the importance of soil protection, and to receive feedback on the results and proposals. The events were always well attended. The urgency of sustainable soil management was emphasised again and again. Many important and helpful practical tips came from the participants.

1.5 Cooperation with the Pan-African Parliament

The Pan-African Parliament, a politically influential African Union institution, has agreed to take on political ownership of the project to ensure that the project and its results are perceived and taken into account at the political level. In March 2019 the project was first presented to the newly established Pan-African Parliament Alliance on the Sustainable Development Goals. The Committee immediately expressed interest in the project and pledged its support.

Against the background that African national parliaments are playing an increasingly crucial role not only in domesticating Sustainable Development Goals (SDGs) in their respective countries, but also in ensuring that these goals are implemented in an inclusive, accountable, citizen-oriented and sustainable manner. Already in the pre-planning phase of the project, the Pan-African Parliament and some of its members discussed the specific roles and mandates of African parliaments in the

SDG process. One recommended course of action was to ensure harmonisation with the African Union (AU) Agenda 2063 to ensure optimal integration with the SDG indicators. African parliamentarians have a role to play here, in particular with regard to legislative tasks in the implementation of Agenda 2030 and to raise voters' awareness of this. They also play an important role in facilitating the mobilisation of resources; in setting and monitoring resource allocations to implement and achieve sustainable development goals; in aligning with national planning targets; and in domesticating SDGs by enacting and reviewing legislation to facilitate implementation at local, national, regional and continental levels.

With regard to the Pan-African Parliament's tasks and scope of action, a memorandum of understanding (MoU) was concluded on 9 October 2019 between the Pan-African Parliament, the DROP Institute and UBA. The cooperation anchored in the MoU refers to possible projects of future implementation of SDGs.⁶

The first project explicitly mentioned in the MoU was the ongoing project for the development of a model law on soil protection in Africa. From now on, the MoU allows for cooperation between the three partners the Pan-African Parliament, DROP and UBA on all issues relating to the implementation of Sustainable Development Goals in Africa.

The results and recommendations of the first project were presented to the Pan-African Parliament SDG Alliance on 6 March 2020. All members of the Alliance stressed the importance of sustainable land management in Africa and fully supported the project recommendations. The Pan-African Parliament SDG-Alliance recommended the consultative development of a concrete model law.⁷

In terms of its mandate, the Pan-African Parliament is entitled to draft model laws on all relevant issues and to recommend them to the national parliaments in the more than 50 African member states of the AU. With regard to soil, this could perhaps be achieved in one or more follow-up projects, where, among other things, model legislation on soil protection could be prepared in consultation, which could then be adopted by the Pan-African Parliament as model legislation, submitted to the national parliaments and recommended for implementation. The planned resolution of the Pan-African Parliament as a plenary body is still pending and has not yet been adopted owing to the corona pandemic.

6 See press release by Stellenbosch University at <https://bit.ly/2Yms5Gr>, accessed 28 January 2021.

7 Siehe Pressemitteilung des PAP, <http://cosmoafrica.co.za/index.php/news-and-events/181-pap-maps-firststeps-for-model-legislation-on-sustainable-soil-management-in-africa>.

2 Project results

In the following sections, the overall project results are presented, focusing on options to improve legislation on sustainable soil management.

2.1 Setting the scene

Africa is situated east of South America, south of Europe and west of the Oceania. The continent is flanked by the Atlantic Ocean on the west and the Indian Ocean on the east. The size of Africa is 30 million square kilometres, which makes it the world's second largest continent. The continent's population was estimated to be 1.2 billion in 2016. The major economic activity in Africa is agriculture and that is why soil protection is a pertinent issue on this continent. Other economic activities include mining, energy generation and investments. Africa has a range of climates, such as an equatorial climate, tropical climate, arid and semi-arid conditions and subtropical conditions in the highlands. The vegetation in Africa mirrors the climate but, generally, the continent is covered by vegetation.⁸

The economies of the more than 50 African states have developed differently. In some countries, industrialisation is already well established. But several conditions prevail in most, if not all, African states:

- Large portions of the population make their living from agriculture and the GDP of countries is largely based on agricultural activities. Most farmers practise on a small scale and are thus extremely vulnerable to external shocks due to climate or economic changes.
- National income often depends on the export of natural resources. The level of processing is usually low.
- Foreign investment in land, agriculture and extraction of natural resources is an important economic factor.
- African states often face a high or very high level of debt, which strongly hinders the ability to invigorate economic development by stimulus programmes.

The following factors constitute potential soil degradation drivers and present challenges to soil health: Agriculture; mining; industrialisation; urbanisation; weather and climate change; topographical constraints; poverty; poor law implementation and enforcement; and illegal or illegitimate foreign investment in land.

⁸ Detailed information is to be found in the three country studies in this publication.

2.2 Proposed options

The following solutions have been identified and proposed:

2.2.1 Framework legislation

Overarching provisions legally declaring soil as a critical natural resource and stressing its ecological functions would be beneficial for mainly three reasons: First, the costs of rehabilitation or restoration by far exceed the costs of sustainable management. Second, owing to the nexus of climate crisis, natural resources, poverty and development options, sustainable soil management is a required ingredient – along with, among others, avoidance of societal tensions and political and military conflicts, birth control, and fair trade – to achieve an improvement in the economic conditions in African countries and to achieve sustainable development. Third, as climate change is high on the international political agenda, considerable international funds are available for climate mitigation and adaptation projects.

Sustainable soil management and land degradation neutrality (LDN) implementation could be addressed by constitutional provisions or by an overarching framework of law. It seems to be reasonable to emphasise legally that soil is a natural resource which provides essential ecological functions which are linked to most relevant social and societal implications as outlined above. In particular, the link between sustainable soil management and climate change should be explicitly mentioned.

With regard to the control mechanism, the framing act should establish a permission regime for activities with severe risks for soils. The activities for which an *ex-ante* permission is required needs to be undoubtably determined in order to avoid any misunderstanding. In order to achieve LDN and to implement this objective, planning instruments to calculate the ongoing degradation and the envisaged restoration also need to be established. It would be beneficial if the framing legislation determines – at least roughly – the roles, competencies and responsibilities of the various governmental entities with regard to LDN management; the determination of environmental quality standards; the emission limit values and technical standards; the setting of regional standards which fit the regional specificities; and the permission regime.

Comprehensive and coherent soil policies are a further option to promote sustainable soil management in African countries. The advantage of soil policies is that they fill the gap between the legal norms and subsidiary standards and indicators. They could address how to get the ‘soil engine’ established and continuously running. Along with all these planning and prior control instruments, it is also reasonable to consider incentives for compliance. From a legal perspective, incentives could primarily be sanctions in all legal forms: fines, civil rights obligation to restore land/soil degradation, and even criminal sanctions such as penalties.

2.2.2 Climate change, land and soil

Climate change and soil/land management are interlinked. Sustainable soil management could be both a mitigation and adaptation measure. Climate change could cause significant negative effects on soils owing to, for example, higher temperatures or droughts. More research is required to understand the complex interconnections of land, soil, climate, water, society, sustainability and food, especially in Africa. In terms of technical and legal principles on adapting to climate change from the point of view of soil protection, the need for further action on how to implement climate protection in soil protection law becomes apparent.

The aims of climate-related soil protection should be introduced in accordance with other protected natural resources and political objectives, while the measures should be introduced into an assessment framework. In this light and also in support of the Nationally Determined Contributions (NDCs), a legal framework should be established to offer effective instruments in order to implement climate ambitions in Africa. Significant gaps in the NDCs and contained commitments need to be bridged and national governments might consider (re-)evaluating national, regional and transformative response options and policy instruments. More inclusive forms of socially just and more equitable governance processes and institutions should also be considered.

2.2.3 Agriculture

To improve legal provisions for sustainable soil management, agriculture needs to be addressed in respect of crop growing and livestock. Generally, it is to be recommended that national governments implement regulations on soil pollution and limit the accumulation of contaminants beyond established levels in order to guarantee human health and well-being, a healthy environment, and safe food. In addition, the lack of awareness about the significance of soil is an obstacle against achieving sustainable soil management (SSM). There is a need to increase awareness and understanding of the profound importance of soil for human life, and to educate the public about the crucial role soil plays in food security, climate change adaptation and mitigation, essential ecosystem services, poverty alleviation and sustainable development.

This can be effected through agricultural legislation addressing the following: The practices that may compromise and restore soil health and sustainability; standards on good practices, also regarding the impacts, monitoring, effectiveness and implementation; some of the unsustainable practices such as the use of chemical fertilizers and pesticides and ‘slash and burn’ are *strictu sensu* illegal in terms of already existing legislation in the three countries.

It is recommended that prohibitions on such unsustainable practices should be provided first. Secondly, there is a need to establish adequate mechanisms to ensure

enforcement of such prohibitions: The Stockholm and Rotterdam Conventions on the control of pesticides and chemical fertilizers should be implemented in national provisions. Thereby, adequate standards for fertilizers and pesticides could be set. The inclusion of adequate sanctions in legal regulations such as fines or imprisonment is recommended. There is a need for qualitative and quantitative communication on what soil is, and how soil relates to sustainability, crop production and economic development, as well as other sciences. Lack of communication presents a limitation to the consideration of soil in the context of its role as an answer to sustainable economic development. Extension services are appropriate for these kinds of communications challenges. In addition, these services could cover physical soil health, agricultural practices and information dissemination. Information derived from soil research must be made available to the scientific community and to soil users, namely farmers, agronomists, foresters, civil engineers and society, thereby transferring and sharing knowledge with stakeholders, decision makers, land-use planners, politicians and others.

Traditional knowledge could be an important source for both setting adequate standards and to ensure the needed respect for cultural perceptions of land. Thus, there is a need to systematically collect and synthesise traditional knowledge in order to both preserve cultural heritage and to balance modern and traditional attitudes and approaches. The soil–science discourse must continue to expand beyond its traditional identification with agriculture as it becomes a partner in the earth, ecological and environmental sciences.⁹ Adequate institutional settings are required for law implementation and enforcement. It is within this context that recommendations in the respective subsections should be considered. Among others, continuous monitoring is needed. Soil testing on a regular basis would be one option. As unsustainable practices are often the consequence of poverty and insecure living conditions, a system of soil stewardship payments or other economic incentives should be considered.

2.2.4 Livestock

The following is recommended: First, environmentally unsound practices should, at best, be prohibited. In this context, negative effects on forests and effects which may risk increased desertification should be taken into account. As far as possible, environmentally sound practices with regard to the protection of soils should be determined and approved as legally binding standards. Extension services need to be strengthened in order to better inform and consult with farmers concerning legal standards and acceptable practices. In order to also establish clear incentives, sanctions such as fines and imprisonment should be part of the whole regulatory concept. As provisions are

⁹ Usman & Kundiri (2016: 66).

senseless without implementation, an appropriate institutional setting is required. The science–policy interface is important in this context as well. Finally, as settlements, such as villages and cities, will sprawl over the next years, a zoning concept needs to be established and enforced in the context of spatial planning on a regional level and for town planning.

2.2.5 Industrial facilities

Industry is a potential further driver of soil degradation. The magnitude and the quality of the potentially negative effects depend on the level of industrialisation in a particular country and on the regulatory approach to deal with the effects.

In order to determine the potential options for good soil governance with regard to industrial facilities, it is helpful to arrive at conclusions on the major soil threats involved with industrial activities. Industrial facilities may primarily cause contamination via the emission of hazardous substances through air, water or other means. In addition, physical soil threats like land take, sealing and compaction may be caused by the establishment and operation of industrial facilities. The establishment of industrial facilities may also have detrimental effects on particularly valuable compartments of soils – taking into account the particular fertility of soils, the level of soil carbon and biodiversity – e.g., swamps.

It is recommended that a regulatory regime should first address soil degradation, in particular by contaminants, which has already been caused by existing facilities, and secondly avoid future negative effects by both existing and new facilities. In order to set clear requirements with regard to contamination, soil quality standards for the most crucial parameters such as lead, cadmium, mercury, benzopyrene and others, should be adopted.

In the case of contamination which has already occurred, the regulatory regime should require the restoration of the contaminated areas. Usually, the operator should be held responsible and should bear the costs of the rehabilitation measures, according to the ‘polluter pays’ principle. In addition, it seems to be reasonable to institute a soil restoration fund, to which all operators of industrial installations should contribute financially.

In order to avoid or at least reduce future soil contamination by industrial facilities, it is essential to establish a regulatory regime, whereby industrial facilities may not be established or operated without prior written authorisation. For the sake of clarity, it is recommended that the categories of industrial installations for which an authorisation is required should be listed in a subordinate legal instrument such as an ordinance.

Environmental impact assessments, including environmental impact studies, should be used as a baseline to decide whether an industrial activity is permitted or not. Furthermore, the operator should be committed to continually monitoring whether the

requirements which are included in the authorisation are complied with. The monitoring should be at the expense of the operator.

Additionally, a regulatory instrument could be established which clearly sets economic incentives for the operators of new industrial installations to avoid negative effects on soils. In order to maintain soil functions, the operator could be required – before production starts – to examine and to document the status of soils beneath the industrial site in a so-called ‘baseline report’. The baseline report should be one of the documents required for the application for a prior-written authorisation. Furthermore, it should be regulated that after the closure of the site, the operator has to rehabilitate the site to its original soil and groundwater status, if significant negative effects have been caused.

2.2.6 Mining

Mining has had a major impact on soil, water and biota since ancient times,¹⁰ and documented examples from around the world abound of heavily contaminated soils associated with mining activities. The challenges with regard to the implementation of environmentally sound mining are diverse. First of all, mining activities by foreign investors certainly need to be treated differently from national enterprises and small-scale mining. With regard to mining operations by foreign investors, the recommendations concerning tenure rights and control by foreign investors have to be considered and applied. More generally, some further recommendations could be made. All recommendations which have been submitted with regard to industrial installations are equally valid for mining operations, for example: Restoration obligation for soil contamination which has already occurred; the requirement of a written prior authorisation based on an environmental impact assessment and the involvement of the public; and the establishment of an effective monitoring system.

A specific challenge is the regulation and control of small-scale mining. It is hardly possible to allocate sufficient resources so that an effective enforcement of ‘good provisions’ is doable and whereby such small-scale mining can be controlled. Three measures seem to be more promising: First, security of land tenure could work to avoid wild and uncontrolled mining as people have a clear concept of their possession and would hinder negative effects on their property. Second, awareness raising may cause people to look for other opportunities to make their living. Third, if the carrot does not provide sufficient incentive, the stick might work. In other words, severe penalties in cases of law infringements around mining operations may create a public perception that illegal small-scale mining is risky and unattractive owing to potential penalties.

10 FAO & ITPS (2015).

2.2.7 Infrastructure

It is recommended that the measures suggested to control foreign investors need to be implemented in the context of infrastructure construction. The recommendations with respect to industrial installation also apply for a better protection of soils on construction of infrastructure. The effective protection of soil quality needs to be a crucial criterion, either through an environmental impact assessment or as one of legal requirements of a permission procedure.

Along with these governance-related recommendations, it seems to be advisable that African governments consider investing in other forms of transport such as railways to reduce CO₂ emissions and negative effects on soils. Finally, increased internet connectivity is important, among others, to develop a basis for gathering, synthesising and publishing data on soil quality and status. This will assist in increasing awareness.

2.2.8 Urbanisation

Africa is an exceptionally biodiverse continent, but it is urbanising rapidly, to the detriment of its natural resources. The continent has “seven megacities, that is cities with populations over 10 million: Cairo, Kinshasa, Lagos, Accra, Johannesburg–Pretoria, Khartoum and Nairobi. In 15 years, Luanda and Dar es Salaam will be added to this list.”¹¹ Although urbanisation is a necessary condition for modernisation, there is an increasing need to account for its direct and indirect impacts on the continent. With soil being the lifeline of biological diversity and ecosystem services, it is clear that there is an urgent need for sustainable urbanisation in Africa.

In order to manage the effects of urbanisation processes in African states, a routine, well-coordinated town-mapping process needs to be put in place. In order to come up with effective town planning, the required information on natural resources (soil) and human population needs to be available and to be taken into account.

Legal instruments such as mandatory town planning can only be effective if such planning is applied reasonably with a long-term development perspective – where sufficient information can become available to support decisions and where town planning is accepted as motivation for the subsequent authorisation of buildings and infrastructure. In addition, it should be obligatory to base town planning decisions on environmental impact assessments, which necessarily include soil quality. In order to achieve sustainable soil management, enhanced digital soil mapping tools could provide a cost-effective means of determining soil geographical distributions.

11 Güneralp et al. (2017).

2.2.9 Clarity of land tenure

Land tenure types and policies strongly influence land-use practices and hence affect the quality of soils in Africa. Land tenure in Africa – both statutory and customary – is characterised by insecurity, constituting a potential underlying driver of soil degradation in general, and specifically in Cameroon, Kenya and Zambia. There is a variety of land tenure types, giving rise to conflict and unsustainable land and soil management in these countries – which may arguably be a reflection of what occurs on the entire continent. There is, for instance, ample evidence where customary rules prescribe acceptable claims to lands among members of communities, but such claims are contradicted or nullified by national legislation. Communally ‘owned’ lands, in particular, in Cameroon and Zambia are insecure. Consequently, such lands are easily converted into national lands for development purposes. This conflict between the land tenure systems, both statutory and customary, leads to rising land tenure conflicts.

One reason for the insecurity of owned land is the high economic value presently placed on land and its appurtenant resources. This has invariably increased the tendency of the most powerful to engage in land-grabbing and dispossession in Africa. This is to the detriment of the vulnerable groups that are increasingly being displaced from their lands, which leads to heated disputes and conflicts. In fact, customary land tenure systems offer weak security, and the modern land law provides huge opportunities for land-grabbing.

In addition, all three countries have weak governments and a problem with corruption. Soil management systems in all three countries are linked to corruption, which contributes to the inefficiency of the law. Furthermore, the various pieces of land legislation in Cameroon and Zambia are completely void of soil protection provisions. That means, in particular, that the land tenure systems of Cameroon and Zambia are silent regarding the question of the environmental landowners’ and users’ responsibilities.

With the exception of Kenya, one does not find a strong anchor point for soil protection when perusing the countries’ legislation on land tenure. None of the scattered pieces of legislation in Cameroon and Zambia make any direct or implicit reference to the need to protect soils. Also, despite Kenya’s rich land law that lends support to sustainable soil management and protection, the various statutes have not been effective in the management of land and, by extension, have not enhanced the protection of soil in Kenya.

The main challenges of planning, corruption, political patronage, weak institutions and institutional conflicts have been disregarded. It is these shortcomings that have prompted the following recommendations: The multiplicity of legal instruments and requirements on access to land should be reduced by means of harmonisation and consolidation of the fragmented and dispersed pieces of legislation on land tenure be formed into a single and comprehensive and overarching land act. New legislation in

some countries should recognise customary laws relating to land tenure or at least should ensure that procedures for access to land are comprehensible and accessible to all social groups. Preferably, land acts that harmonise and consolidate the segregated and scattered pieces of legislation on land tenure should be enacted in these countries and place customary and statutory land tenure on an equal footing in terms of their status. Alternatively, such land acts should recognise and accord customary land rights legal protection and consider such rights as a category of private property existing alongside national lands and state-owned lands. This may be accommodated within ongoing land tenure reform processes.

The responsibility to protect the environment, especially soils in the harmonised and consolidated legislation on land tenure, should be specifically mainstreamed. Appropriate and clear vertical as well as horizontal institutional arrangements should be crafted that make for a win-win situation in order to curb or completely put an end to institutional conflicts, as these are negative precursors to sustainable soil management initiatives. Measures to fight corruption and enhance institutional capacity in land administration matters should be put in place.

2.2.10 Control of foreign investors

Foreign investors constitute one of the main groups of actors responsible for soil degradation in many African countries such as Cameroon, Kenya and Zambia, necessitating their effective control. The increased role of foreign investors across many economic activities in these countries can possibly lead to spiral effects of land and soil degradation. Their role as main actors of soil degradation in these countries is much felt in the mining and agricultural sectors. Therefore, foreign investors constitute some of the actors to be considered in the process of developing model legislation for soil protection in these countries and the whole of Africa. The role of foreign investors in the mining sector is significant.

Improving the legal control of foreign investors is critical to guarantee the effective protection of soils. Such control is crucial in order to ensure that land-use investments are sustainable and that the laws of the countries are being observed. This can be done through the following measures:

Laws should be enacted that impose environmental degradation taxation, such for pollution or soil contamination, to be paid by all (foreign and domestic) investors who partake in activities that constitute a potential threat to the quality of soil. Certification schemes for commodities production susceptible to cause soil degradation should be legalised. Land reforms should be promoted that limit the amount of land that can be acquired by foreign investors or that specify sizes of land depending on the activity to be carried out.

Commitment of foreign investors to corporate, social and environmental responsibility or business/corporate citizenship should be fostered so as to avoid social conflicts with communities. This is a self-regulating paradigm that can help foreign corporate investors to be socially accountable to the public and thereby avoid activities that are likely to degrade the soils on which the public depends. Corporate social responsibility (CSR) should result in foreign investors increasingly respecting the environment and promoting sustainable development practices. In the era of globalisation, different approaches to this practice will also allow more effective protection of soils. In this light, CSR must go beyond legal obligations, but at the same time cannot be reduced to the expression of charitable compassion. It must penetrate all foreign investment practices in Africa, placing the peculiarities of the continent in relation to the benefit of any undertaking.¹²

Mobilising investment for sustainable development in Africa requires political commitment to overcome substantial barriers at various levels. To enable new markets for sustainable development requires adequate regulatory frameworks (international, regional and national) in order to give investors, the necessary confidence. The national state has to balance the interest of attracting (and securing) international investment while promoting peace and security for its population. The most appropriate approach for achieving both of the aforementioned is adherence to and promotion of the rule of law, while creating incentive structures for investors to act sustainably and to respect national social development goals, empowerment policies, labour standards and human rights.¹³

3 Institutional arrangements

The focus of the following section is on the implementation, the control, the monitoring and the enforcement of the substantial provisions. Good governance depends on both good regulation and effective implementation. In other words, without effective implementation the law in itself is useless, or – to put it more straightforwardly, it is not worth the paper it is written on. Insufficient or even lack of law enforcement is often a core issue in developing countries, in particular in counties of sub-Saharan Africa.¹⁴ Thus the following section is of tremendous importance.

In order to be effective, several management tasks have to be implemented by the governmental bodies (or private institutions have to be managed by the governmental bodies in order to fulfil the specific tasks). An appropriate arrangement of institutional

12 Ruppel & Tchuente (2018: 13).

13 Ruppel & Shifotoka (2017: 56).

14 Cf. for example: Kameri-Mbote et al. (2019); Ruppel & Kam Yogo (2018); Ruppel & Dix (2017); Ruppel et al. (2017); Ruppel & Ruppel-Schlichting (2016).

roles and competencies requires that these tasks are clearly and undisputedly attributed to specific entities. First of all, information on soil conditions and soil quality, on ongoing activities which might affect soils and on technological options need to be gathered and disseminated among at least the competent authorities. Secondly, the management task involves standard setting: again, this is a complex, demanding and time- and resource-intensive task. Standards are important as they enable competent authorities to implement the, quite vague, legal provisions (for example: protection of soils). Standards should in particular be established for soil quality with regard to soil health as well as to physical parameters (e.g., for soil carbon, biodiversity, organic matter). These quality standards are particularly important as they define what level of interference is tolerable. Thirdly, soil authorities need to be involved in prior permission regimes for activities which might have negative effects on soils such as industrial installations, the use of pesticides, and the construction of roads, highways and railways. Moreover, monitoring of soils is an additional task. Finally, competent authorities need to control the compliance with substantial provisions for operators, in particular, and citizens, in general, to enforce compliance. Chiefs of local communities usually hold quite a strong position in African countries. It would be beneficial if their roles, responsibilities and oversight were clearly regulated and would dovetail with the existing arrangements of other governmental powers.

Sustainable soil management must be achieved taking into account the local specificities. From this perspective, it seems to be reasonable to strengthen the decentralised entities, at least at the level of regions and, to a certain extent, at the level of municipalities or local communities.

To re-arrange institutional processes and to clearly define the competencies and roles of the various entities – and further to decide which entities are superior and have a control function over others – all in all makes up a highly disputable process, as such clarity also means that responsibility may not be allocated to certain aspects with the consequent loss of power over them.

Advantages and benefits form the political buy-in which is needed to be successful. The potential advantages and benefits can be highlighted as follows: Clarity concerning the procedures should foster trust in the process. People tend to regard a decision as legitimate if it is taken on the basis of already established procedure; and clarity concerning the procedures enables good governance. If the procedure is clearly and appropriately defined, it seems likely that the decisions have been taken on a reasonable basis as the required information and expertise have been considered. Clarity concerning the procedures allows for accountability, reliability and transparency – all of which are ingredients of a modern and well-established civil society. The reputation of states could be increased – even at international level. Clarity would establish a level playing field for all – including foreign investors. Thereby, a positive regulatory environment for fair and responsible investors should be formed, in order to expel detrimental foreign investments.

Workable arrangements for institutions and procedures would ensure that the respective states would probably be in a better position to deal with future challenges, such as the effects of climate crisis or poverty and hunger. The detailed determination of the specific roles, competencies and responsibilities of the various governmental entities is important to enable the implementation of the substantial provisions effectively. It needs to be stressed that the determination of the specific roles, competencies and responsibilities is a demanding issue. It needs to be legally stipulated which ministry is responsible for which driver and for which task.

A further point to be considered is whether and to what extent competencies and responsibilities should be attributed to decentralised governmental entities. In general, decentralised competencies seem to be more effective as the regional specificities can be better assessed and taken into account by a competent authority which is familiar with the regional conditions. Local chiefs hold a strong position in most African countries with regard to the living conditions in the local communities. Cases have been reported where local chiefs have misused their powers to either neglect the requirements of environmental protection or to make short-term and unjustified earnings – sometimes to the disadvantage of the local communities which they represent. First, it seems to be reasonable that local chiefs receive more support and advice from soil scientists. Second, local chiefs must be seen as part of the whole soil-related administrative structure. Third, decisions by local chiefs must be taken via a transparent and inclusive procedure. Fourth, similar procedural rights of citizens and the general public should apply with regard to decisions by local chiefs, such as in respect to access to justice.

Water is an issue in most African countries. Thus, in most, if not all, African countries there are water ministries and a complex administrative setting of competent authorities. A simple and perhaps promising approach might be to add the responsibility for sustainable soil management to the water-related entities.

The aforementioned recommendation must be adapted on a case-by-case basis, owing to differing national preconditions. There is no single blueprint which fits all systems. However, they are options which should be considered seriously.

4 Procedures and procedural rights

Effective procedures which allow for a thorough assessment of all relevant aspects before taking decisions and procedural rights of concerned citizens are generally regarded as essential in order to achieve good protection performance. Procedural requirements and procedural rights can only be effective if implemented in practice – a challenge which is addressed in the following subsection. In the following subsection four aspects are discussed: environmental impact assessment, access to information, public participation and access to justice.

It needs to be stated, that the four instruments should be part of the legal system in order to ensure that environmental effects are assessed systematically and comprehensively and that citizens have the opportunity to access information, to participate in permission procedure on activities which are of concern to them, and to have access to justice. Moreover, it must be ensured that these instruments are effectively implemented. These are some of the proposals that may help to reduce the challenges that affect procedural rights: Environmental Impact Assessments (EIAs), access to information, public participation and access to justice. The recommendations that pertain to the strengthening of these rights and in particular to ensure effective soil protection include:

Environmental impact assessmentss should be mandatory by law for all activities which might have significant effects on soils; access to information on soil quality needs to be guaranteed; legislation should be enacted that defines the scope and structure of public participation in soil protection decision-making; resources should be invested in infrastructure that supports access to justice and other procedural rights in matters pertaining to soil protection; specialised courts on environment and land seem to be one option to strengthen the expertise of judges on soil and land topics both from a scientific and a legal point of view; programmes should be developed to raise awareness among the population of their right of access to courts, their right to public participation, and their right of access to information and any initiatives that can facilitate the protection of soil; marginalised people, indigenous groups, minorities, women, youth and people with disabilities should be particularly educated and encouraged in the attainment of procedural rights such as EIAs, access to information, public participation and access to justice

Moreover, the ministries of justice could be obliged to monitor the implementation of the procedural rights and to provide reports with regard to this implementation on a regular basis. A further option would be legislation that consolidates and harmonises soil rights in the African legal systems. This would create uniformity and cooperation in the advancement of soil protection in Africa. The African Union could play a specific role in this regard.

5 The role of science

Soil science can raise awareness about organic matter as a key attribute of soils and to illustrate its importance for soil functions and ecosystem services. Soil science can improve the transfer of knowledge about soils; contribute to educational programmes; facilitate communication with policymakers by framing research in terms that resonate with politicians on issues like the policy cycle or by considering drivers, pressures and

responses affecting land-use change; and help to reach the United Nations Sustainable Development Goals (SDGs) in the most effective manner.¹⁵

The science and society interface is key in shaping effective laws and policies. Science must also inform the discourse on soil protection in Africa, which in turn must inspire new laws, policies and procedures that can deal with the state of crisis and elucidate a system that ensures that we ‘leave no one behind’ in the transformation towards more soil sustainability, resilience, equity, and justice. In this light, science can help to develop indicators and standards that can guide us towards more sustainable practices. LDN interventions must be informed by science–policy interaction as a basis for responsible land governance and soil management. Effective cooperation between scientific institutions can contribute to an advancement of understanding and commitments through greater scientific engagement with stakeholders.

While universities form actors and institutions for academic and scientific diplomacy, the African Academy of Sciences and its various country chapters, the Council for Scientific and Industrial Research in South Africa, the Ghana Soil Information Service, the Cameroonian National Observatory for Climate Change and the Global Alliance of Universities on Climate are examples of such emerging cooperative networks which can inform and promote research, policy development and implementation, technological innovation and entrepreneurship, creation of jobs and relevant knowledge and skills, and development of education and exchange programmes. Ultimately, the independence of scientists from governmental influence and political agendas must be preserved, so as to avoid the perception that they are working towards preconceived political goals or agendas. Responsible decision-making processes also need to integrate traditional knowledge systems and citizen science.

6 Global, continental and regional cooperation

Knowledge systems and infrastructure, citizen engagement and international cooperation gain increasing importance in the protection of ecosystems, mitigating natural disasters, halting biodiversity loss caused by changes in land use, direct exploitation of natural resources, and also climate change. In this light, a green transition and energy access can foster partnerships within Africa and contribute to building a low-carbon, climate resilient future, while fostering sustainable development.

While improving soil law and governance under the structures of the AU and regional economic communities (RECs), new legislative frameworks need to be developed to strengthen national strategies and policies and fill existing gaps in terms of implementation, among other things. For this matter, channels for finance and other support are needed to enhance the capacity on the ground. Improving African soil

¹⁵ Keesstra et al. (2016).

governance must also address options for enhancing coordination and coherence between the national policymakers, RECs, parliamentary forums and the AU structures at large.

The African Continental Free Trade Area (AfCFTA) agreement will create the largest free trade area in the world, measured by the number of countries participating. The pact will connect 1.3 billion people across 55 countries with a combined gross domestic product (GDP) valued at US\$3.4 trillion. It has the potential to lift 30 million people out of extreme poverty but achieving its full potential will depend on putting in place significant policy reforms and trade facilitation measures.¹⁶

Enabling free trade goes hand-in-hand with actions at both the supranational and national levels. Potential negative externalities of trade on soils should not be neglected. Moreover, regional communities can provide framework potential for reform, for example, by bringing together regulators to define harmonised standards or to agree on mutual protection interests. In this light, the African Union and particularly its Pan-African Parliament and its members can play a role in ensuring harmonisation with Agenda 2063 “through integration” of the SDG indicators.¹⁷

In the United Nations Framework Convention on Climate Change (UNFCCC) process, input by the African Group of Negotiators should strengthen the views on soil protection, also using the findings of this project. With a view to fulfilling obligations related to the Paris Agreement, NDC cooperation opportunities may contribute to fostering long-term climate action and mobilising means for implementation – finance, capacity-building, and technology development and transfer on the continent. While all 54 countries have signed the Paris Agreement and submitted NDCs, many have also ratified them. However, in numerous instances, NDCs were drafted hastily, not fully taking all related interests into consideration.

Lastly, for African and existing REC courts to contribute successfully to dispute settlement (which could also become relevant in the context of soil protection and management), there lies great opportunity and potential for the future. Until now, however, frequent failures often prevented the attainment thereof.¹⁸

7 The way forward

In terms of a way forward, the task of a follow-up project could be to develop model legislation on sustainable soil management in Africa, to be adopted by the Pan-African Parliament and sent as a proposal to all national parliaments of the African Union.

16 World Bank (2020).

17 Also see chapter on the Pan-African Parliament of the African Union: Composition, mandate, partnerships and its quest for sustainable development in this volume.

18 Cf. Ruppel (2012).

Such a follow-up project should, among other things, comprise the following work packages: Elaboration of concrete proposals for legislative and sub-legislative changes in legislation on sustainable soil management in selected African countries representing all the regions of sub-Saharan Africa. Systematisation of the results in order to be able to develop different model legal modules (according to the principle of ‘mapping out options’) for Africa. Extensive consultations and adoption of the model law by the Pan-African Parliament would take into account the procedural requirements of the Pan-African Parliament and the African Union. A bottom-up approach would here again be necessary. The elaboration of the results should essentially be carried out by African experts with the involvement of stakeholders, representatives of governments, scientists and local traditional leaders. The follow-up project could make a substantial contribution to improved soil protection in Africa. The Pan-African Parliament SDG-Alliance has already called on the two project partners (DROP and UBA) of the initial project to work on this in a follow-up project.

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