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Policy Brief

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Making Sense of South Sudan's New Petroleum HSE Management Systems and Plan Regulations[1]

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Summary

Environmental conditions in South Sudan's petroleum producing areas have continued to deteriorate. This is demonstrated by recent reports of oil leaks and spills, inappropriate handling of produced water and mud pits, birth defects, people and animals getting sick and dying after drinking water contaminated by petroleum activities (Moro, 2014, Rueskamp et al., 2014, Moro, 2009). In March 2015, South Sudan's Minister of Petroleum and Mining signed new regulations to implement HSE Management Systems and Plans as stipulated in the Petroleum Act, 2012 to ensure the petroleum industry operate in accordance with international best practices. About a year after the signing of the new regulations and seven months after being launched publicly by the Ministry, the companies have met none of the requirements. The main reasons for non-compliance include inadequate political will, regulatory design and technical constraints. This paper analyses the new HSE regulations, and recommends ways to achieve their successful implementation.

I. Introduction and background

This paper analyzes the petroleum health, safety and environment (HSE) management systems and plan regulations issued in March 2015 and launched on September 21, 2015, by South Sudan's Ministry of Petroleum and Mining (MPM). The analysis identifies the gaps and recommends ways to achieve a successful implementation. The new regulations have been issued to implement the Petroleum Act, 2012, particularly sections 99 (1n and p) read together with sections 12 (3j), 52, 60 and 81 (2). Sections 12 (3j) and 99 (1n and p) give the Minister the power to initiate and enact legislation and regulations. Sections 52, 60 and 81 (2) lay out the requirements that these new regulations enforce, which include management systems, health and safety and environmental management plans.

Environmental Management System (EMS) is a system of environmental policies, plans, objectives, targets, implementation measures, monitoring and evaluation, among others, aimed at preventing or reducing company's environmental impacts to increase its

[1] We thank CORDAID for financial support to conduct this analysis.

performance and efficiency (ISO 14001: 2015, Melnyka, et al, 2003, Delmas & Toffel, 2003, Kwonf et al., 2002, EPA, n.d). EMS is based on a continuous improvement model (See figure 1). Through EMS, a company declares its environmental policy, plans on how to implement that policy, formulates objectives and sets targets on environmental performance and puts in place implementation measures. In addition, it puts monitoring and evaluation mechanisms in place to ensure that the objectives and targets are met and if they are not met, recommendations are made on the basis of management review to correct the system. It is considered an international best practice for companies and organizations involved in petroleum business to acquire EMS certification from the International Organizations for Standardization (ISO 14001).

Melnyka, et al. (2003) and Kwonf et al. (2002) found that management systems[2] help companies to improve their environmental performance. For example, companies that acquire the ISO 14001 certification have higher standards of environmental performance than their counterparts (Melnyka, et al, 2003; Kwonf et al., 2002). In several cases, EMS leads to positive outcomes such as operational efficiency and effectiveness and managerial and employee awareness of environmental issues (Rondinellia &Vastagb, 2000).

Some petroleum operating companies in South Sudan have voluntarily adopted management systems. However, these have not been translated into practice in the oil fields. This leaves the environmental conditions to continue to deteriorate as demonstrated by recent reports of oil leaks and spills, inappropriate handling of produced water and mud pits, birth defects, people and animals getting sick and dying after drinking water purportedly contaminated[3] by petroleum activities[4] (Moro, 2014,

[2] By management systems, we refer to Environmental Management System (EMS) and Occupational Health and Safety Management System (OHSMS), both of which are required to be implemented through these new regulations.

[3] See Sign of Hope. (2008). New evidence for serious impact of oil-exploitation on human rights in Southern Sudan. http://www.ecosonline.org/news/2008/^index.html/Press%20Information%2015%5B1%5D.02.2008.pdf.html

See WNPOC. (2009). White Nile Corporation Response to Concerns over Water Contamination. http://www.ecosonline.org/news/2009/WNPOC_response/

See Sign of Hope. (2009). Sign of Hope responds to WNPOC's reaction. http://www.ecosonline.org/news/2009/Sign_of_Hope_Nov_27_2009/

See News24. (2016). South Sudan Oil Pollution Threatens Thousands. http://www.news24.com/Africa/News/south-sudan-oil-production-pollution-threatens-thousands-20160304.

[4] White Nile Petroleum Operating Company, now Sudd Petroleum Operating Company, the company that has been operating in the area, has often dismissed such reports and the government has made little effort to commission an independent comprehensive study to prove whether what the Sign of Hope has found is valid or not.

Rueskamp et al., 2014, Moro, 2009). The government issued the new regulations in 2015 to inject the force of law into their implementation, perhaps because of the failure of voluntary adoption of management systems. However, it is one thing to issue regulations and another to implement them.

The paper is structured as follows. Section 1 introduces the paper; section 2 analyses the new regulations by particularly identifying the key requirements, strengths, gaps and challenges and section 3 concludes and offers recommendations to enhance a successful implementation of the new regulations.

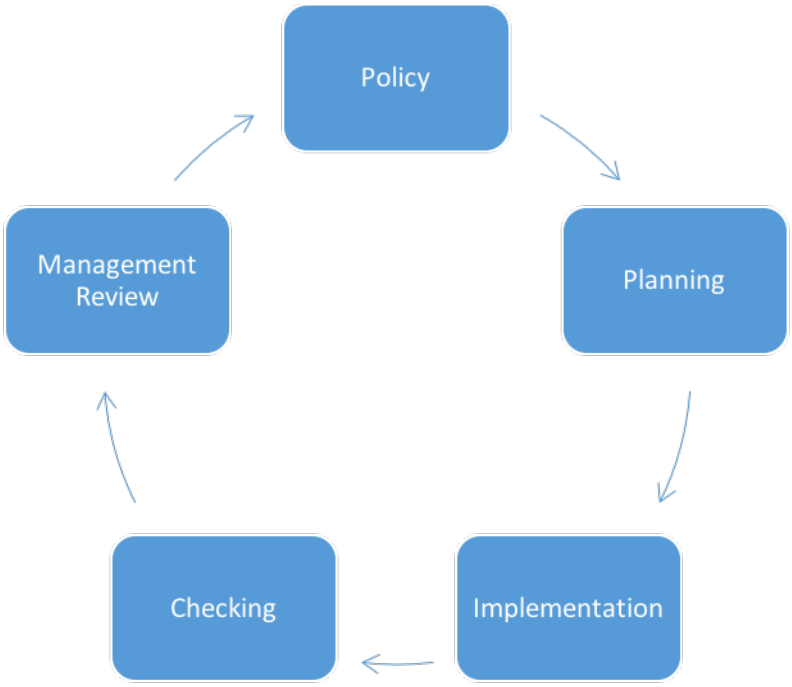
II. New regulations: requirements, strengths and gaps

A. Requirements

The new Petroleum HSE Management System and Plan Regulations require the petroleum companies to (1) develop management system, (2) management plans, (3) carry out plans and programme audits and (4) prepare and submit annual reports on the performance of the systems and plans (see table 1). The management system has two parts, namely environmental management system (EMS) and Occupational Health and Safety Management System (OHSMS). In addition, plans include environmental and safety aspects, namely environmental management plan and health and safety plan. Both must be systematic, explicit, comprehensive, proactive and apply to all the petroleum activities, plans and programmes, and be carried out in line with ISO's Standard 14001:2004 for EMS, standard 18001: 2004 for occupational health and safety and standard 9000 for quality management.

As part of the management systems and plans, companies must establish an organizational structure, document policies and follow processes, procedures and other elements of management system. To follow processes, procedures and other elements of the management system, companies must develop the management system based on the ISO's standards model of continuous improvement of environmental and safety performance, which requires that a company makes (1) policy, (2) plans for policy implementation, (3) implements policy, and evaluates and review the policy (see figure 1).

Figure 1: Continuous improvement model for management system



To implement the management systems and plans, companies must first appoint an Accountable Officer whose role is to establish, implement and maintain the management systems and plans in addition to being responsible for financial and human resources required to achieve such an objective. Within 30 days after the appointment, the companies are expected to notify the Ministry of Petroleum and Mining with the names, qualifications and duties of the Accountable Officer; the Accountable Officer must also sign all these documents accepting the responsibilities of the position.

Under the new regulations, companies that plan to start a new project must submit their management systems and plans to the Ministry of Petroleum and Mining within 60 days before starting, while companies with existing petroleum projects must submit their management systems and plans within 90 days from the day of the signature of the new regulations. The 90 days' timeframe applies to the current operating companies namely Dar Petroleum Operating Company (DPOC), Sudd Petroleum Operating Company (SPOC) and Greater Pioneer Operating Company (GPOC). The new deadline for the management systems and plans to be submitted to the Petroleum Ministry was December 20, 2015 based on the announcement of the Petroleum Ministry during its launch of the new regulations on September 21, 2015. The companies are also required to submit annual reports on the performance of the management systems and plans on March 31 of every year. The deadline for the first annual report after the new regulations was March 31, 2016. The companies have failed to meet these deadlines. Other important time bound requirements include internal and external audits of the management plans and

programmes, with the former to be carried out regularly, while the later is to be conducted every three years by an independent audit firm.

Table 1: Requirements under the new Petroleum HSE Management Systems and Plans Regulations 2015

Requirements	When it should be submitted	Where it should be submitted
Environmental Management System (EMS)	Within 60 days for new petroleum projects and within 90 days for existing projects	Ministry of Petroleum and Mining and Ministry of Environment for review
Occupational Health and Safety Management System (OHSMS)	Within 60 days for new petroleum projects and within 90 days for existing projects	Ministry of Petroleum and Mining, Ministry of Health and Ministry of Labor, Human Resources and Public Service for review
Health and Safety Management Plan	Within 60 days for new petroleum projects and within 90 days for existing projects	Ministry of Petroleum and Mining, Ministry of Health and Ministry of Labor, Human Resources and Public Service for review
Environmental Management Plan	Within 60 days for new petroleum projects within 90 days for existing projects	Ministry of Petroleum and Mining and Ministry of Environment for review
Annual reports on the performance of management systems and plans	March 31 each year	Ministries responsible for Petroleum, Environment, Health and Labor
Internal audits on the management systems and plans	Regularly	Ministries responsible for Petroleum, Environment, Health and Labor
External audits on the management systems and plans	Every three years	Ministries responsible for Petroleum, Environment, Health and Labor
Notification of the appointment of accountable officer in writing, including the name, qualifications and duties of, and signed statement by the appointed accountable officer accepting the responsibilities	Within 30 days after the appointment of the accountable officer	Ministry of Petroleum and Mining

B. Strengths and gaps

First, the regulations integrate best practices from the ISO 14001's standards and this, therefore, counts as a significant strength. Second, the inclusion of an Accountable Officer to be in charge of implementation is also another important strength. Third, required actions and reporting times are clearly indicated. However, as mentioned early, the companies have not fulfilled these requirements. This lack of implementation can be attributed to inadequate political will and war since 2013. While political will has been critical in the effective enforcement and compliance, there are other crucial technical and

regulatory factors that constrain a successful implementation or compliance with the regulations. We discuss these constraints in the subsequent paragraphs.

First, the art of regulating to protect the environment has evolved and is no longer a one side fits all strategy. To reflect this evolution, regulators use a hybrid of both command and control and incentive based regulatory approaches to achieve the regulatory objectives (Goulder & Parry, 2008, Hahn & Stavins, 1991). However, these regulations heavily draw from the command and control approach and incorporate little or no incentives at all. Command and control regulatory approach sets specific uniform equipment, technology and standards to be used by companies to prevent or minimize environmental impacts (NCEE[5], 2010, Goulder & Parry 2008, Hahn & Stavins, 1991). The command part of the approach deals with prescribing the types of equipment, technology and standards needed while control part refers to enforcement, monitoring, evaluation and penalization of violations. The command and control approach has a number of advantages, one of which is its ability to force companies to adapt to environmentally friendly technologies (Hahn & Stavins, 1991). There are a number of cases where the companies have significantly reduced pollution in response to a regulatory requirement for a specific technology. However, one of its disadvantages is inefficiency, as some firms do not have similar ability to meet the costs of the prescribed technologies and equipment (Hahn & Stavins, 1991). In addition, command and control incurs high administration and enforcement costs, particularly on the regulator.

The new regulations, as discussed previously, are based on the command and control approach without fully stipulating elements that make command and control regulations successful. For example, while the command part of these regulations is somehow sufficient, the control aspect is inadequate. The command part is somewhat sufficient in terms of the uniform standards the companies are required to implement, such as management systems and plans in accordance with ISO's standards. However, the control part is inadequate because the ability to enforce, monitor, evaluate and penalize has not been sufficiently stated in the new regulations. While it is clear that the requirements should be submitted to the Ministry of Petroleum and Mining, nothing is mentioned about who should act and the magnitude of action in terms of penalties if such requirements are not submitted. All is about what the companies should do but none- is said in the regulations about what the Ministry of Petroleum and Mining should do in response to non-compliance.

Second, consequences for non-compliance are not adequately stipulated in the new regulations. While there is a mention of penalties, the magnitude of these penalties has not been stated. Experiences of regulatory compliance in other contexts show that firms comply with regulations based on 'calculated motivations' or calculated consequences of regulations (Winter & May, 2001). In determining compliance, they consider the probability of being detected, likelihood of being fined if detected and compliance costs

[5] NCEE stands for National Center for Environmental Economics under the US's Environmental Protection Agency.

(IBID). For example, firms can comply if the benefits of compliance are higher than the costs of compliance (Winter & May, 2001, Ehrlich, 1972, Stigler, 1970). Likewise, if the chances of being detected are higher and the fines are costly, then the firms can comply with the regulations. Firms predict the probability of being detected on the basis of the frequency of checks (IBID). They also predict the impacts of fines based on the pace, firmness and magnitude of penalties (IBID). If inspections are more frequent, if there is a certainty of being fined if detected and if the magnitudes of such fines are severe, then firms are more likely to comply.

In the case of these regulations, the frequency of inspections of the state of the health, safety and environment is not also stipulated even though the frequency of the management system audits is mentioned. Therefore, companies cannot be in a position to calculate the likelihood of being detected and fined and the severity of consequences for them to comply. Frequency, certainty, formality and consistency of inspections are important in deterring the companies against non-compliance. There should have been a stipulation on the frequency of inspection of the state of the health, safety and environment to reinforce the audits of the plans and programmes.

Inspection frequency and the certainty and magnitude of fines can be shaped by the adequacy of enforcement mechanisms and styles of enforcement (Winter & May, 2001). For example, if regulatory authorities do not have an effective enforcement, inspection and punishment system in place, firms can fail to comply because chances of being detected and punished will be very low. In the same vein, if enforcement styles are formal or informal, the regulated entities can calculate and decide compliance accordingly. As mentioned previously, there are no adequate stipulations of enforcement mechanism in these regulations. A formal enforcement style ensures certainty and reliability in terms of being detected, shamed, and fined. In addition, a measured level of coercion is important in ensuring compliance. However, too much coercion can easily backfire (Winter & May, 2001). Besides, a warning must be followed with required penalties; otherwise the regulated entities may not take such warning seriously next time. Little is mentioned about these important aspects of compliance, which expose the new regulations at the risks of not being complied with.

Third, given the fact that the new regulations lack incentives; they can become difficult to enforce due to lack of strong and efficient enforcement system. In many contexts, incentives have become more effective in motivating companies to protect the environment (Hahn & Stavins, 1991). Some of the incentive based approaches that can be applicable in this context include pollution charges, tradable permit, and deposit refund system, among others (Goulder & Parry, 2008, NCEE, 2010, Hahn & Stavins, 1991). Pollution charges mechanism involves charging a fee on a unit of pollution discharged or emitted (NCEE, 2010, 2001, Hahn & Stavins, 1991). For example, in South Sudan's case, petroleum companies can get pollution charges on a volume of untreated produced water they discharge into the environment. This can make the companies acquire better technologies to prevent or minimize pollution and reduce cost. Tradable permit is carried out by establishing the allowable pollution limit and given in

forms of a permit (NCEE, 2010, 2001, Hahn & Stavins, 1991). Companies, which keep their pollution below the allowable levels, use their extra permits to offset pollution in other areas of business or sell to those who exceed allowable pollution levels. The advantage of pollution charges and tradable permit is that the marginal cost of pollution control is similar across all firms. Tradable permit has been considerably successful in the US in reducing Sulfur dioxide SO_2 to combat acid rain. In South Sudan, the measure could be used to minimize contamination from produced water. Refund deposit system charges consumers or customers extra fee on a product that has a potential to pollute the environment (Walls, 2011). The fee is deposited and is refunded when the consumer or customer returns the used product to a recycling or disposal center for recycling or disposal (IBID). Refund deposit system can be used in this context to prevent pollution by oil field chemical containers, beverage containers, water bottles, oil containers and vehicle parts, among others.

Fourth, the petroleum operating companies in South Sudan have insufficient awareness of the new regulations. For example, there was a limited publicity of the new regulations when the Minister of Petroleum and Mining signed them in March 2015. It took six months for the government to convene a workshop where petroleum companies were officially informed about the new regulations. By the time the Petroleum Ministry convened the workshop, the deadlines for submitting the requirements to the Ministry had already passed by three months. In other words, the first incident of non-compliance happened in part because of lack of awareness. Even though the workshop informed the petroleum companies, there were no serious follow –ups to remind the companies and to ensure they knew what they are required to do and when they would meet those requirements. A regulated entity's awareness of regulations and its ability to comply play a crucial role in complying with regulations (Winter & May, 2001). Awareness of regulations can be in two forms, namely the knowledge of the existence of new regulations and of the required actions in order to comply with the regulations. Since regulations are complex, some companies can get confused over what is required of them in the new regulations, and therefore can fail to comply simply because they do not know which actions are required of them (Winter & May, 2001). While awareness is important, a company cannot sometimes comply if it does not have the capacity to comply. While the new regulations have specified some personnel requirements such as having an Accountable Officer, they are vague on the number of staff, financial resources and technological equipment required for the companies to successfully implement the new regulations. The financial resources allow the company to buy and install the required technological equipment and to hire qualified personnel to implement the requirements.

Fifth, even if all elements of command and control are fully stipulated, the new regulations are at risk of a regulatory capture as the regulator, the Petroleum Ministry, is itself a role player in the extraction and management of petroleum resources. This is caused by lack of environmental policy and law to centralize the regulation of environmental matters under an independent environmental agency. Regulatory capture is a condition that happens when regulatory authorities do the bidding for the industry's interests at the expense of public interests (Bo, 2005). A combination of petroleum

industry's and Petroleum Ministry's interests in the extraction of petroleum resources has affected the Ministry's ability to protect the environment. This has happened through behind the scene companies' lobby against environmental regulations by building a misleading narrative that presents environmental protection as if it is a tool against the extraction of petroleum resources. It goes without saying that the Petroleum Ministry's priority objective is the extraction of petroleum resources as about 98% of the government's budget comes from the petroleum revenues. So any effort that interferes with this priority objective has not been encouraged. Some passionate individuals within the Ministry of Petroleum who have been pushing for true environmental protection have been sidelined. While the Petroleum Ministry should be lauded for its effort to enact the new regulations, one cannot be a soccer player and be the referee at the same time. This double role has exposed it to regulatory capture by the petroleum industry. It would logically follow that the Ministry of Petroleum and Mining should seek an independent referee to judge whether the petroleum industry players are playing according to the rules or not. Conventionally, an independent environmental authority or the Ministry responsible for the environment is often the right referee to issue the rules and enforce them by giving penalties to ensure the industry players are playing in accordance with the rules.

Sixth, there is a deficiency of social pressure on the petroleum companies in South Sudan for them to comply with these new regulations. Media and civil society organizations have limited capacity and freedom to scrutinize and raise awareness about the dangers of non-compliance with environmental regulations. This limited capacity on the side of the media and civil society is compounded by limited freedom to access information particularly in the oil fields. For example, researchers and media have been denied access to certain parts of the oil fields on the basis of insecurity.

It has been documented in several contexts that social pressure generates social motivations for companies to comply with regulations (Winter & May, 2001). Some firms want to be acknowledged among peers as caring about the environment with the hope that such acknowledgement can earn them reputation from the public and customers (Esty and Winston, 2006, Gunningham et al., 2002). Because of social pressure or social motivations, some firms go beyond complying with the regulations (IBID). This allows the public to view them favorably, which can lead to high sales of their products or provide them with social license to operate[6] particularly in the case of extractive resources companies (Moffat & Zhang, 2013, Gunningham et al., 2002).

However, social pressure cannot work effectively without the freedom to access information and to express concern freely on the basis of such evidence. Social pressure can work in contexts where the public possesses high environmental values or are highly informed on the dangers of environmental degradation and resources depletion. South Sudan has low environmental values due to lack of awareness and empowerment. In

[6] Social license to operate (SLO) is the general acceptance of a company by a community to extract minerals, oil and other forms of resources in its territory.

other contexts, informed and empowered civil society organizations stage demonstrations and media campaign that embarrass big corporations, harm their reputation and brand integrity (Baron et al., 2009, Esty and Winston, 2006, Gunningham et al., 2002). In turn, companies respond to these pressures by complying with the regulations or even go beyond compliance (Baron et al., 2009, Esty and Winston, 2006, Gunningham et al., 2002). If they do not, they can suffer reputational decline, lose social license, and incur costs due to regulatory fines (Baron et al., 2009, Gunningham et al., 2002, Winter & May, 2001).

III. Conclusions and Recommendations

This paper has identified key requirements in the new petroleum HSE Management Systems and Plan Regulations. These include (1) development of management system and (2) management plans, (3) auditing of these systems, plans and programmes and (4) preparation and submission of annual reports on the performance of the systems and plans. Since the signing, petroleum companies have not met these requirements. While the political will is the biggest obstacle, other factors such as unclear stipulations of consequences for non-compliance, inadequate enforcement mechanism, vague stipulations of frequency of inspection, regulatory capture, inefficient regulatory approaches, inadequate social pressure, and insufficient awareness have a role in hindering the compliance. We recommend the following:

- The Ministry of Environment should finalize the environmental bill with urgency it deserves. This bill should centralize the responsibility for regulating environmental matters. In this case, no sector should regulate itself. The Ministry of Environment or a new Environmental Management Authority that has been stipulated in the Agreement on the Resolution of the Conflict in South Sudan (ARCISS) should handle all environmental responsibilities.

- While waiting for the Ministry of Environment to finalize a new environmental law that effectively puts the environmental authority at the center of regulating environmental matters across all sectors, the Ministry of Petroleum and Mining should collaborate with the Ministry of Environment and ministries responsible for health and labor to establish a joint ministerial board headed by the Ministry of Environment to implement the new regulations. It should be responsible for receiving petroleum companies' management systems and plans, annual reports and audit reports and for reviewing and approving them and should monitor and penalize any company who fails to comply with the new regulations.

- Proper control measures should be put in place to ensure inspection, detection and penalization of those who violate the new regulations. These control measures

should include competent personnel, financial resources and technological equipment. Such control measures will create the capacity to enforce, monitor, evaluate and penalize the violators.

- The magnitude of penalties should be stated clearly and frequency of inspections should be increased to deter companies from violating the new regulations.

- There should be incentives to enable companies to move towards reducing their impacts on the environment. Incentives in the form of tradable permits and pollution charges should be tried out as part of enforcing these new regulations.

- The government should create an enabling environment for civil society, media and researchers to exercise constructive and evidence based advocacy. As part of creating enabling environment, civil society and media should be empowered in terms of training and financial resources to play their roles constructively. Free access to information and freedom of expression create an enabling environment for social pressure to develop. This social pressure is vital for enforcement of government regulations.

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