DATA IN THE DELTA

CASE STUDY: OPPORTUNITIES AND CHALLENGES OF OPEN EITI DATA IN NIGERIA

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ACRONYMS

CSV	Comma Separated Values file
DPR	Department of Petroleum Resources
EITI	Extractive Industries Transparency Initiative
FAAC	Federation Account Allocation Committee
FASD	Fiscal Allocation and Statutory Disbursement Audit
FOIA	Freedom of Information Act
GFS	Government Finance Statistics Manual
GHEITI	Ghana EITI
INEC	Independent National Electoral Commission
IODC	International Open Data Charter
ISIC	International Standard Industrial Classification
JUDS	Joined-up Data Standards
JV	Joint Venture
KPI	Key Performance Indicator
MCA	Modified Carrying Agreement
MSG	Multi-Stakeholder Group
NEITI	Nigeria Extractive Industries Transparency Initiative
NNPC	Nigerian National Petroleum Resources
NOC	National Oil Company
NODA	Nigeria Open Data Access
NSWG	National Stakeholders Working Group
OGP	Open Government Partnership
PPDC	Public Private Development Centre
PSC	Production Sharing Agreement
SC	Service Contract
SNA	System of National Accounts
USEDATA	Using Extractive Industry Data for Accountability and Transparency

SUMMARY

Open data has received a lot of attention in the international arena during the last decade. In parallel to this, the EITI has expanded its work in this area, with a newly-approved open data policy and requirements for EITI implementing countries on open data policies and disclosures. This paper identifies and discusses some key opportunities and challenges of open data in the Nigerian context. It provides recommendations for both EITI and NEITI in their transition toward open data.

NEITI has the mandate and political will to promote open data, and opportunities to encourage other government agencies to follow suit. NEITI has already implemented open data formats can help them better respond to external requests for information. Through participation in various recurrent meetings NEITI can shed light on important quality assurance mechanisms.

There are several long and short term benefits, efficiency gains and financial advantages of transitioning to more open data disclosures. The challenges identified seem to range across three main dimensions: the perception that open data can lead to increased misrepresentation and altering of source-data; accessibility of source-data (creating a question of accountability / data quality) and capacity. The paper presents options to mitigate these challenges.

KEY RECOMMENDATIONS

Nigeria Extractive Industries Transparency Initiative (NEITI) should:

- **Seek input from potential data users**; both internally in the National Stakeholders Working Group (NSWG) and others. A policy has been published which addresses some of the opportunities and challenges identified in this study. NEITI should use the policy to advocate for:
  - o Ensuring continuous accessibility of data from NEITI's Reports.
  - o Providing explicitly a mandate for NEITI in complementing parallel efforts of open data.
  - o Addressing the perceived challenge of data being misused or misrepresented.

- **Encourage other agencies to adopt open data policies and practices**, taking advantage of existing work streams and cooperation (e.g., NEITI's participation in the FAAC-meetings, NNPC's monthly disclosures, and to engage more actively with DPR on their technical issues).

- Explore options for **creating a NEITI dashboard solution,** engaging NRGI in Nigeria for technical assistance. If desirable, such assistance should also aim to address capacity issues.

- **Assess the relevance of other websites'/solutions' visualisations**, in particular those with open licensed source-codes such as US-EITI and soon EITI.

- Perform a **scoping study** to explore what existing disclosures are well-suited for mainstreaming, and leveraging this opportunity to include open data policies or formats.

The EITI International Secretariat should:

- Create an EITI Guidance Note for the creation of open data policies. This guidance should:
  - o **Emphasise experiences from EITI implementing countries on open data**, in particular sharing best practices from other implementing countries.
  - o **Address existing data standards**. The latter includes GFS classification, UN's SNA/ISIC and others identified in the *Options for Data Reporting - EITI Standard 2016*.

- Undertake a **desk-study of common challenges in open data institutionalisation**, and provide examples for mitigating said challenges.

- Explore the possibility of **sharing source-code for webpages and visualisations**, enabling implementing countries to choose low cost solutions that will work best for them.

- Support NEITI in **identifying funding opportunities** from both the international and national communities to promote open data in Nigeria.

1. BACKGROUND AND INTRODUCTION

Open data has been a point of focus in the international arena over the last decade. Among the multilateral organisations, the African Development Bank (2016), International Monetary Fund (2016), World Bank Group (2016) and United Nations (2016) have all established large databases. While multilateral organisations focus on the availability of large databases, the Open Government Partnership (OGP) and others promote open data as part of opening up government systems as a means to enable accountability. In parallel to this, the International Extractive Industries Transparency Initiative (EITI) Board approved EITI's Open data policy (2016a). Following the EITI Global Conference in February 2016, this policy also became part of the 2016 EITI Standard (2016b).

For many, open data is still a very abstract concept. For the sake of clarification, we will describe some of the most widely used definitions. According to Open Definition, "[o]pen data and content can be freely used, modified and shared by anyone for any purpose" (Open Group, 2016). The International Open Data Charter (IODC) describes open data as "[…] digital data that is made available with the technical and legal characteristics necessary for it to be freely used, reused, and redistributed by anyone, anytime, anywhere." (Principles, 2016)

The recurring theme is that open data is information which is accessible, a more precise definition than available. Accessibility is necessarily available, but by definition it also implies immediately or continuously available for anyone who wishes to explore the information. It is therefore also a necessity that access must be free of charge. By specifying that digital data is also made available with the necessary technical aspects, the definition of the IODC specifies that information in locked formats such as pdf-files or other non-flexible formats does not suffice. The information contained in pdf files is not open data, as it is available, but not accessible. Extracting, reusing and modifying data from pdf reports requires a lot of work which does not meet the definitions described above.

The EITI has come a long way on open data, by continuously building a database for summary data of EITI Reports (EITI International Secretariat, 2016c). This is the beginning of the *international* database, but the policy also mandates that open data and policies for such be created on the *national* level. This paper seeks to identify the various challenges and opportunities of open data in Nigeria, and how NEITI can work with the EITI International Secretariat to promote open data access for the Nigerian extractive sector. The study has limited its focus to the oil and gas sector for now, but lays the basis for exploring the inclusion of solid minerals (the mining sector) at a later time.

2. OPEN DATA IN NIGERIA

Open data has come to Nigeria as well as other countries in the region with numerous databases and repositories serving different purposes. Most notably are the Nigeria Data Portal (Knoema, 2016), sponsored by the African Development Bank Group and the National Statistics Office's Open data portal (2016). Several other agencies and ministries are following suit, and several repositories are underway or already online[1]. However, according to the Global Open Data Index (Open Knowledge, 2016), Nigeria ranked 113 out of 122 countries in terms of open data. It is still unclear whether this rank has taken the latest developments into account.

Already much information is available in the public domain in Nigeria, so much in fact that USEDATA, a programme compiling more than 100 datasets in one single repository[2], is underway (Montrose, 2016). However, not all information is open data, even though it is publicly available. Most disclosures found on government websites in Nigeria have one common denominator – a majority of the data are made available in pdf format. Examples of such sources are monthly disclosures on Performance Data (NNPC Group, 2016) by the Nigerian National Petroleum Corporation (NNPC), the National Production Monitoring System (DPR, 2016a) and license registry (DPR, 2016b) of the Department of Petroleum Resources (DPR). Another such example is the outcomes from three monthly meetings of the Federation Accounts Allocation Committee (FAAC), essentially reconciling revenue-payments between various government agencies each month. These meetings have so far produced reports, but are all locked in pdf-files. Nonetheless, these regular disclosures show a change of pace in Nigerian government transparency, and with enough backing in the legal framework, they can lead to more open forms of information disclosure.

2.1 Legal framework and political buy-in

There is legal backing for publishing information in Nigeria, a point well-known by NEITI. The most important legislation is the Freedom of Information Act (FOIA) of 2011 (Ministry of Justice, 2011). The FOIA in its essence allows any person (citizen of Nigeria or not) to gain access to any information in the public domain, or in the custody or possession of any public official, agency or institution. The act allows such access without the need of explaining *why* one would wish to gain such access, and anyone will have that right unless the contents of the information are exempt from the act.

Some exemptions covered by the law itself are in relation to international affairs and defence; any disclosures that can interfere with due process and fair trial during law enforcement and investigations; information which is defended by personal privacy laws; and third party information,

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[1] To name a few: Nigerian Open Data Access (NODA), Open Data Development Initiative, Independent National Electoral Commission (INEC), Oil Spill Monitor, and Gas Flare Tracker.

[2] USEDATA Nigeria, http://www.usedatanigeria.com/

including corporate information that may e.g. threaten competitiveness.

However, for NEITI's purposes, none of these are barriers towards using FOIA's mandate to guide NEITI's ambitions in open data. A recurrent theme of the act is also that *applications or requests* for information is only needed for the documents not already publicly available through the internet or other telecommunication-devices. It encourages proactive disclosures by explicitly referring to organisation and maintenance of information to facilitate public access. By using the FOIA, in combination with the NEITI Act (Ministry of Justice, 2007), NEITI seems to have a solid mandate to provide proactive disclosures using open data formats.

In many societies, formal legislation is one thing, while actual implementation may not be feasible due to the political climate. However, as stated previously, there is a general movement towards open data in Nigeria, or rather public disclosure of previously undisclosed information. Senior government officials have also committed to improve transparency of the Nigerian government. President Muhammadu Buhari attended the Anti-Corruption Summit in London in May 2016, stating Nigeria's intention of joining the Open Government Partnership (OGP), and a general commitment to becoming a transparent society (Oteng, 2016).

Joining the OGP means the government embraces the Open Government Declaration (Open Government Partnership, 2016). The declaration covers a wide range of commitments, but also is specific in terms of open data:

> *"We commit to pro-actively provide high-value information, including raw data, in a timely manner, in formats that the public can easily locate, understand and use, and in formats that facilitate reuse. […] We recognize the importance of open standards to promote civil society access to public data, as well as to facilitate the interoperability of government information systems."*

This shows a commitment to apply open data platforms. Under President Buhari, there has been several other changes which pave the way for agencies to follow through, such as continuous audit mechanisms instead of risk-based ones for government agencies. In addition, the Minister of State, Budget and Planning is the former Executive Secretary of NEITI and a current member of the EITI Board, and the EITI Champion is the Minister of Mines and Steel Development. With such senior officials in government working actively toward transparency, this should form a solid base on which to drive forward the discussions on open data.

3.   SPECIFIC OPPORTUNITIES FOR NEITI

The previous section described how the legal framework and political buy-in support NEITI's ambitions in open data. This section will look at specific projects in which NEITI can focus its attention, when moving from pdf to open-format disclosures.

## 3.1   NEITI dashboard – organically induced open data

Under the FOIA, NEITI has already received some requests. It also realises that it will require significant staff resources when compiling such information, especially when it is contained in large documents with low potential of modification to suit the requests.

NEITI staff are therefore exploring what tools may be used to ease this burden. One such possibility is the creation of a 'NEITI Dashboard', an idea that spawned internally at NEITI (see the figure below). A dashboard is a data visualisation tool commonly used by businesses to display important metrics and to monitor key performance indicators (KPIs). It contains various information and usually incorporates many charts on one webpage. An example of such dashboards is the Ghana Extractives Dashboard (Ghana EITI, 2016), a page to assist Ghana EITI in their open data efforts. These tools provide two main layers of information; one is the dashboard itself, displaying the headline information and examples of how to analyse the underlying data, while the second layer is the data itself – downloadable in open formats such as excel- or csv-files (CSV – Comma Separated Values file).

NEITI has been experimenting with such solutions themselves, in order to extract the vast amounts of data contained in their EITI Reports covering revenues from the extractive sector for 1999-2014. The importance of such a dashboard is to work quickly, utilising the momentum, to publish files that stakeholders can assess and give feedback on. Once a database has been completed, it is easier to maintain and add additional information to it.

This is one example of how NEITI, without having to engage others for data collection, can easily approach open data. However, in addition to this approach, NEITI can tap into other agencies they deal with on a regular basis. After initial compilation and dissemination of *other agencies'* data, they can also influence the same agencies to pursue open data themselves.

Figure 1: NEITI Graphical Dashboard
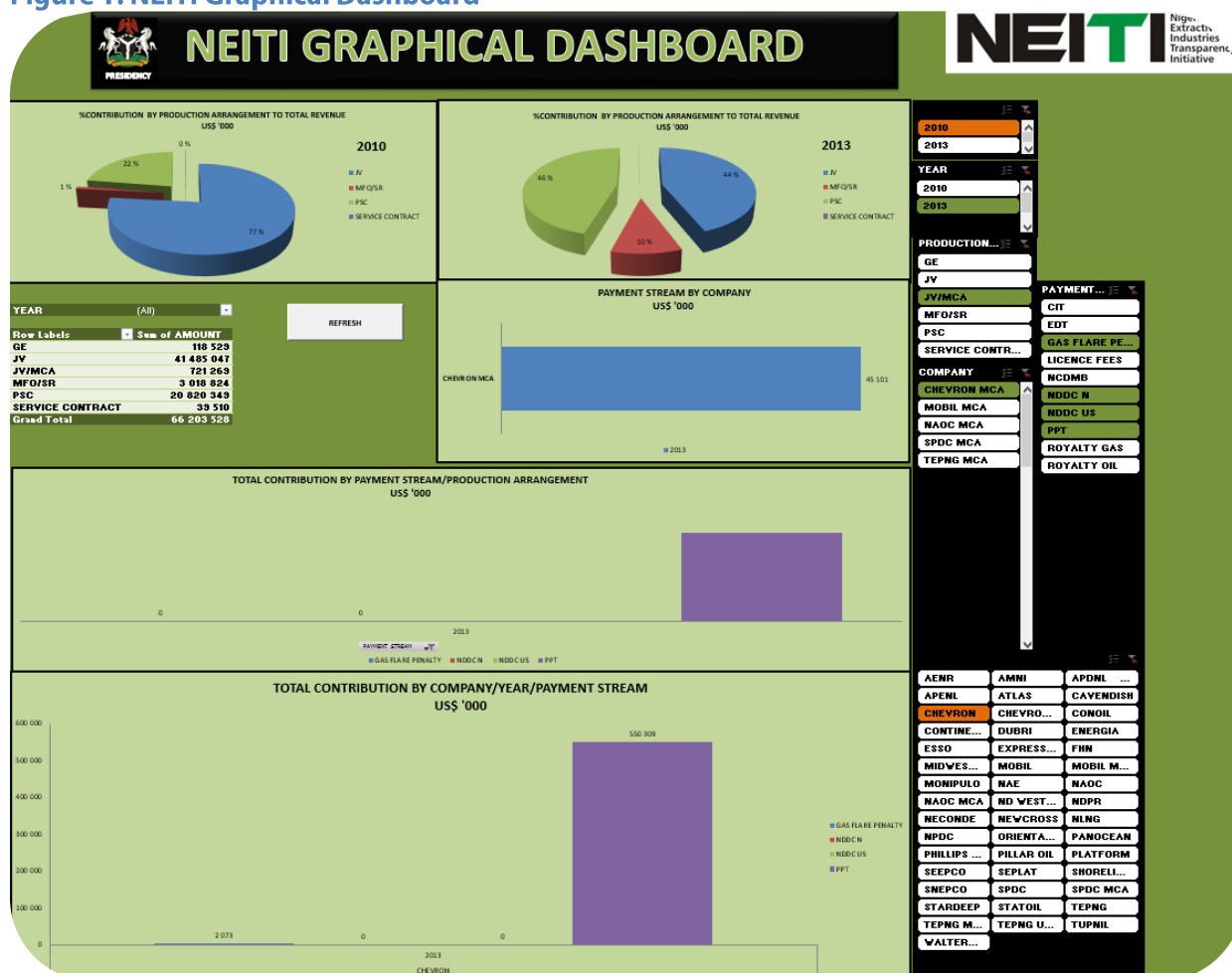
Source: This draft dashboard was provided by NEITI staff to the author.

3.2 Tapping into work-streams outside the traditional EITI Report process

One channel through which NEITI can make use of or influence is the Federation Account Allocation Committee (FAAC). Each month NEITI attends three sub-committee meetings held between eleven relevant government agencies[3] in a *monthly reconciliation-process*.

Some of the notable participants of the FAAC meetings are:

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[3] Agencies include: Department of Petroleum Resources (DPR), Nigerian National Petroleum Corporation (NNPC), Central Bank of Nigeria (CBN), Nigeria Customs Administration, Federal Inland Revenue Service (FIRS), Budget Office of the Federation, Ministry of Petroleum Resources, Ministry of Solid Minerals, Office of the Accountant-General of the Federation, Revenue Mobilisation and Fiscal Allocation and Commission, the FAAC, and NEITI.

- Department of Petroleum Resources (DPR). DPR acts as the department responsible for monitoring production and exports of all oil fields. The department is also in charge of collecting non-tax revenues such as royalties from Production Sharing Contracts (PSC), Modified Carrying Agreements (MCA) and Service Contracts (SC).

- NNPC has regulatory roles through DPR, and manages the Nigerian Government's stakes in JV fields. They also account for income from sales of in-kind revenues and volumes.

- Central Bank of Nigeria (CBN) shares information on cash-flow in and out of the bank accounts, i.e. the actual transactions.

- The Federal Inland Revenue Service (FIRS) presents tax-revenues received for the months in question.

- Lastly, the office of the Accountant General participates to approve the numbers and decisions reached during the FAAC meetings.

The outcome of the three meetings are the FAAC reports[4], containing the final adjusted figures for revenues from both extractive activities, and non-extractive activities. They also include how revenues are allocated between federal, state and local government levels.

The three meetings are as follows: the first meeting is preliminary, in which the different government participants present the government revenues they have registered during the month in question. Any discrepancies between the various parties' numbers or cash-flows are subsequently investigated. The second meeting is for actual allocation of revenues between the various tiers of government. Each level of government has right to a share of revenues according to revenue-allocation rules[5]. By this time, revenues have been reconciled or will undergo further clarification to be finalised at the third and final meeting; the "post-mortem" meeting, after which the outcomes are monthly reports published online and in newspapers.

The FAAC reports have formed the basis for the Fiscal Allocation and Statutory Disbursement (FASD) Audits published by NEITI for 2007-2011. The report "[…] cover actual disbursement of funds accruing to the Federation Account from the oil and gas sector to beneficiaries such as federal, state and local governments, and other relevant agencies, as well as tracking actual application of these funds" (NEITI, 2016a).

NEITI has also taken more timely advantage of their participation in these meetings. In October, they published their first "NEITI Quarterly Review" (NEITI, 2016b), analysing these revenues and comparing

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[4] The monthly reports are available here, but the homepage of the Ministry of Finance's website also contains more recent FAAC reports; the most recent being for August 2016, accessed 9 November 2016.

[5] The precise formula for allocation between the various tiers of government is roughly 56 percent to Federal Government, 24 percent to State-levels, and 20 percent to the Local Governments' Joint Account. A breakdown of allocation between States and Local Governments could not be retrieved at present.

them to previous years. Such efforts truly add value to public disclosure of information in Nigeria. The second issue of the NEITI Quarterly Review was released in December 2016 and analysed FAAC disbursements made in Q3 of 2016.

So far, none of the publications mentioned satisfy the definitions of open data. The data in its "raw data" form is never published, and while the reports contain charts and tables, the source data are locked away in pdf-files, without flexibility or accessibility as defined in this paper.

NEITI has an opportunity to compile a large and highly relevant database due to their involvement in the FAAC meetings. Publication in open formats is especially relevant as they can easily be made available in various disaggregated forms. Disbursements are made by state, by local governments, and in addition to the Federal Account, showing detailed accounts of how the allocated revenues are calculated. The revenues are presented by the various streams in NEITI Audit Reports, although not disaggregated by companies. NEITI staff did indicate that there are meetings between DPR and companies, that could have facilitated data disaggregated by companies. However, they also indicated that NEITI does not attend these meetings.

3.3 Nigeria's giant is opening up

As indicated previously, the national oil company (NOC) of Nigeria, NNPC, has begun monthly publications[6] as well. These publications are also in pdf formats, but remains a huge opportunity for open data in Nigeria. NNPC is publishing several types of information, mainly covering production and exports, as well as revenues from sales of oil and gas across varying levels of disaggregation[7].

The disclosures are also highly relevant for NEITI as they include much of the data needed for their audit reports, covering several requirements of the EITI Standard 2016[8]. For the purposes of NEITI, these can be valuable to convert into open data, and possibly to convince NNPC of beginning to publish these details in such formats. Although there may be pushback, due to perceptions covered under section 4.2, NEITI can lead the way in the open data agenda before transferring the responsibility of publishing the information in open data formats to NNPC itself. In fact, ahead of an independent validation of the NNPC data, NEITI in conjunction with BudgIT published a review of data already disclosed by NNPC for the period January 2015 to September 2016.

Once the information is readily available, and in open formats, this can ease NEITI's data collection process by not having to request information in specific formats, but rather modify and extract the information from NNPC's monthly disclosures to fit with their own purposes. The same information is

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[6] NNPC's regular publications include the Monthly Petroleum Information (MPI), Monthly Performance Data, and the Annual Statistical Bulletin (ASB).

[7] By type of contracts, wells, states, companies, and more.

[8] The files published for September 2015 to August 2016 cover partial or all information required by the EITI Standard 2016 under requirement 2.6, 3.1-3, 4.1-2, 4.5 and 4.7.

then more easily converted to different users' needs, of which NEITI is one. Remember, NEITI is not only a provider of data but a user as well.

3.4 Website, standardisation and linkages

Being both *users* and *providers* of data makes national EITI secretariats good starting points for open data. Through their own information disclosure and a data collection, they can subsequently sensitise other agencies to the concept. NEITI is underway in designing a new webpage, meaning they have the opportunity to dedicate specific sections for open data *dashboards*, similar to what GHEITI has created.

It is also possible to 'borrow' features from one another. US-EITI (18F, 2016) and the EITI International Secretariat are both in the process of making their source codes available to the public under open licenses, enabling others to not only use their data, but use their visualisations and website solutions. It also allows NEITI and other national secretariats to choose the solutions most suitable for their own aspirations with minimal costs.

NEITI has not yet finalised their tools for disclosure in open data formats, and are still in the early phases for creating these. Accordingly, they have the possibility of shaping the layout and data points to accommodate for *standardisation*. In section 2 of this paper, we described some of the many efforts currently underway in open data formats. To ensure optimal relevance and usability of information, it is therefore important to:

- Structure the data in such a way that it can easily be modified to be merged with other datasets.

- Include different taxonomies such as standardised revenue classifications as the IMF's Government Finance Statistics Manual (GFS) (IMF, 2015) to ensure comparability of data both across time and between countries.

Such classifications can also be used for various levels of government, and can be important for domestic comparability as well.

By employing data standards for disclosures, providers of open data ensure common ground for different types of data and users are in a better position to interpret the numbers they are viewing. The EITI so far has not developed data standards that require disclosures according to specific standards, but actively encourages the use of GFS when reporting revenues. Additionally, a study was commissioned by the World Bank to explore options for data reporting under EITI (SNL Financial, 2016). The study explores what international standards exist for the various data-points relevant to all the requirements of the 2016 EITI Standard, including guidance on important issues to consider for the different types of information. It can greatly assist secretariats such as NEITI in making sure their data can easily speak to other datasets, thereby making the data more user-friendly and relevant.

Standardisation of data means greater ease of relating different datasets to one another. Nigeria can draw on USEDATA's experiences to ensure standardisation of data, as they are underway in compiling

more than 100 datasets – requiring a lot of modification if it is to be presented together, and to compare. Another data-provider that may be relevant is the Public Private Development Centre (PPDC), responsible for Budeshi (PPDC, 2016) – an open data initiative for procurement contracts in Nigeria. Procurement contracts are relevant across several sectors and many actors. The PPDC has therefore begun addressing challenges for data standards in open contracting, and has been in contact with Joined Up Data Standards (JUDS) (2016). The combined experiences of USEDATA, Budeshi and JUDS could help NEITI in manoeuvring through the many emerging data standards, making use of already existing solutions.

4. IN PRACTICE

Following the adoption of the 2016 EITI Standard (EITI International Secretariat, 2016b), new requirements were included that mandate an increased focus on open data for implementing countries. Requirements 7.1.b and 7.1.c require a policy or statement from EITI multi-stakeholder groups (MSG) on open data, and that EITI Reports are made available in open data formats, such as excel or csv-files (EITI International Secretariat, 2016d). As EITI employs the multi-stakeholder approach (represented by the National Stakeholders Working Group (NSWG) in Nigeria), it is important that disclosures are agreed upon. The result of deliberations, should accommodate for the views of all constituencies of the NSWG, and should be documented as an open data policy. Such a policy is mandatory for national secretariats from 1 January 2017, and will be the guiding document for the secretariats' open data engagement[9].

As many of the constituency-groups are also potential users of the data itself, they play a key role of giving inputs to what data to cover and how the dissemination tools are structured. However, it is also important to remember that there are users outside the formal EITI process, meaning the information should accommodate their needs as well. It is important to note that one constituency alone must not dictate the needs of all potential user-groups, so engaging other potential users such as academic circles and analysts can be equally important.

A useful step-by-step guide, partially used to guide this case study, is the following:

Step 1 – **Accessibility of EITI data:** According to requirement 7.2 of the EITI Standard (2016e), MSGs are encouraged to make EITI Reports and the information they contain as easily accessible as possible. This requirement encourages machine-readable reports, tagged or coded in such a way that the information can easily be compared to other publically available data. In its essence, this implies reviewing current situation regarding the access, release and re-use of EITI data. Two questions are of

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[9] NEITI published their own Open data policy on 23 December 2016, during the final stages of this case study. Therefore, a detailed analysis of this document was not performed for the purpose of this paper.

particular importance for this step:

1. To what extent is data from EITI Reports *accessible*, as defined above in this study?

2. What wider efforts exist that promotes routine online disclosure? This refers to a reflection of what routine disclosures currently exist that the EITI can tap into in order to ease data collection and dissemination.

Step 2 – Review national policies and international best practice on open data: This step helps to ensure that the MSG's work is aligned with other national efforts; represented in this article by FOIA, OGP, USEDATA, and disclosures made by NNPC, DPR and other government agencies.

Step 3 – Consider options for the policy on access, release and re-use of EITI data: After mapping the current situation, the MSG will have been introduced to several alternatives of how open data can be approached. These should be compared to each other based on the needs of NEITI.

Step 4 – Document the MSG's policy on access, release and re-use of EITI data: Subsequent to a decision on an open data policy, it is important that the MSG and NEITI documents the decision, and agree on how to follow up on the policy. To avoid a large workload for NEITI, one option could be to include this in the Terms of Reference for Independent Administrators, ensuring that the data is collected from its source. Other examples could be taking advantage of existing workflows that NEITI takes part in, such as the FAAC-meetings, to influence several data-sources to publish in open data formats as well.

Step 5 – Follow up and evaluation of progress: Any actions to be taken should be included in annual work plans, and should be evaluated regularly to assess progress or potential amendments on open data.

By performing these steps, implementing countries of the EITI such as Nigeria will have solid platforms and mandates for pursuing open data disclosures. However, this work can also feed into other work-streams made possible under the new EITI Standard, namely mainstreaming.

4.1 Moving towards mainstreaming: Transitioning open data to the sources

Once an open data policy is established and agreed upon, the next step is implementation, in which NEITI must disclose information according to both the EITI Standard and the NSWG's wishes. NEITI has already commenced implementation through several work streams as mentioned in the sections above, and some of these include regular meetings and disclosures by various government agencies. Open data will then complement efforts for *mainstreaming* the EITI process or embedding disclosures

that have gone through quality assurances in the existing government agencies[10]. However, these are long-term areas of operation and are accompanied by several challenges.

A common issue is the accessibility of information. Several sources internally in NEITI indicate that DPR is publishing a license register and daily production-numbers for oil and gas. However, a challenge for DPR in open data is that website is often not functioning. When attempts are made to access the website and many of its pages, the server rarely responds. This means that even though DPR may have a lot of relevant information available it challenges the accessibility-criteria as it is not consistently available.

A study from 2015 sought to identify challenges to institutionalisation of open data in Nigeria (Mejabi, Azeez, Adedoyin, & Oloyede, 2015). The study included a SWOT-analysis (Strengths, Weaknesses, Opportunities, Threats) to map the various stakeholders' perceptions towards open data and wider use of it in the Nigerian context. It uncovered "[…] a pervasive belief that if open data is available in machine readable form, it could be tampered with, modified and falsified." (ibid., page 18). These perceptions were also identified as prominent in other studies from the Philippines and South Africa. As this perception is fairly common, NEITI and other national secretariats are perhaps better suited to initiate a transition to open data formats, and then subsequently sensitise other agencies and stakeholders to the concept.

Companies often share this perception, but also represents an additional challenge in open data. Because they are so many, the content of the open data and the choices of formats and structure will also vary between them. Ways to circumvent such issues exist, such as the creation of a reporting template (already part of EITI implementation). Other alternatives could be to engage Corporate Affairs Commissions, or for NEITI to seek participation in the regular meetings between DPR and companies mentioned previously.

The final challenge of putting open data into practice is related to capacity. The question is whether or not users of open data have the capacity of absorbing the information, and to use it to contribute to public debate. Several organisations are not able to satisfy the demand for information, because the data they publish are not promoted or explained. All dissemination of data requires examples of visualisations and analysis, which is especially true in complex sectors such as the extractive industries.

Technical capacity of websites/servers need to be addressed. However, more importantly, promotion of open data should provide ample explanation of what the datasets contain: strengths and weaknesses together with examples of use, as well as an explanation of the quality assurance process. This enables a user to assess credibility of data and potential errors and omissions. They can also be in connection with regular publications such as NEITI's Quarterly Reviews, their Policy Briefs, or through a dedicated webpage for guidance on how to make use of the data. Such examples used to guide public debate can also be the materials and explanations needed to make sure people understand the data presented to them.

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[10] For more information on mainstreaming, visit https://eiti.org/mainstreaming.

5. CONCLUSION AND RECOMMENDATIONS

This paper highlights some important aspects. NEITI seems to have the mandate and political will to expand its publications into the realm of open data, and explore several viable opportunities to sensitise other government agencies to follow suit. NEITI has already, through its experience from information requests under the FOIA, realised that open data formats can help it to better respond to requests of information. Using their privilege of participating in FAAC-meetings can also help shed light on an important quality assurance mechanism that most Nigerian's are not aware of (at least not to a full extent). Lastly, as the NNPC introduces more consistent public disclosures, NEITI can make use of more recent data on previously one of the most opaque entities in the sector.

This paper has identified several benefits, both long term and short term, and efficiency gains of transitioning to more open data disclosures. The challenges identified are also manageable, although it may take some time in resolving these completely. The challenges seem to range across three main dimensions: the perception that open data can lead to increased misrepresentation and altering of source-data; accessibility of source-data (creating a question of accountability / data quality), and capacity. As these challenges are identified, solutions are needed with the aim to mitigate them.

A lot of work may go into the creation of open data, but the end-results can help NEITI become more efficient in what it is already doing – informing public debate and further complying with the transparency-agenda.

5.1 Recommendations for the Nigeria EITI

Nigeria Extractive Industries Transparency Initiative (NEITI) should:

- **Seek input from potential data users**; both internally in the National Stakeholders Working Group (NSWG) and others. A policy has been published which addresses some of the opportunities and challenges identified in this study. NEITI should use the policy to advocate for:

    o Ensuring continuous accessibility of data from NEITI's Reports.

    o Providing explicitly a mandate for NEITI in complementing parallel efforts of open data.

    o Addressing the perceived challenge of data being misused or misrepresented.

- **Encourage other agencies to adopt open data policies and practices**, taking advantage of existing work streams and cooperation (e.g., NEITI's participation in the FAAC-meetings, NNPC's monthly disclosures, and to engage more actively with DPR on their technical issues).

- Explore options for **creating a NEITI dashboard solution,** engaging NRGI in Nigeria for technical assistance. If desirable, such assistance should also aim to address capacity issues.

- **Assess the relevance of other websites'/solutions' visualisations**, in particular those with open licensed source-codes such as US-EITI and soon EITI.

- Perform a **scoping study** to explore what existing disclosures are well-suited for mainstreaming, and leveraging this opportunity to include open data policies or formats.

5.2 Recommendations for the EITI International Secretariat

- Create an EITI Guidance Note for the creation of open data policies. This guidance should:

  - **Emphasise experiences from EITI implementing countries on open data**, in particular sharing best practices from other implementing countries.

  - **Address existing data standards**. The latter includes GFS classification, UN's SNA/ISIC and others identified in the *Options for Data Reporting - EITI Standard 2016.*

- Undertake a **desk-study of common challenges in open data institutionalisation**, and provide examples for mitigating said challenges.

- Explore the possibility of **sharing source-code for webpages and visualisations**, enabling implementing countries to choose low cost solutions that will work best for them.

- Support NEITI in **identifying funding opportunities** from both the international and national communities to promote open data in Nigeria.

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The EITI (Extractive Industries Transparency Initiative) is a global standard that improves transparency and accountable governance of oil, gas and mineral resources. The standard is implemented by governments, in collaboration with companies and civil society.

Countries implementing the EITI disclose information on issues such as tax payments, licenses, contracts, production and national oil companies.

EITI

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