

Use of Stakeholder Engagement to Support Policy Transfer: A Case of Contaminated Land Management in Nigeria

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ABSTRACT:

Transfer of environmental policy from one country to another without consideration for the contextual differences (e.g. socio-cultural, economic) between the countries can be a barrier that prevents adoption, or limits the implementation and effectiveness of that policy. In this study, we investigate the socio-cultural preferences of stakeholders in the Niger Delta to understand how different stakeholder groups value socio-cultural differences. We used a modified, mixed-methods stakeholder engagement approach to capture this information, combining stakeholder workshops and interviews. Community groups, regulators, experts in contaminated land management, and oil exploration operators participated in this study, and our results revealed a general consensus concerning the ranked priority of issues. Top issues included water quality, soil quality for agriculture, food production, and human health and wellbeing. Despite this consensus, differences in how stakeholder groups arrived at their rankings might pose a challenge for policy makers. Other potential barriers to effective policy transfer identified in this study include political and cultural differences, regulatory structure,

and corruption. In sum, this study provides insights about the socio-cultural preferences of stakeholders from the Niger Delta; information that could be used by policy makers to contextualise contaminated land management policy transfer.

Keywords: contaminated land; social values; policy transfer; Niger Delta; stakeholder engagement

1 Introduction

2 Over five decades of oil spills have caused an epidemic of contaminated sites in the
3 Niger Delta region (UNEP, 2011; Kadafa, 2012; Umukoro, 2012); causing harm to the
4 environment, human health, and the region's socio-economic wellbeing (Orubu et al.,
5 2004; Chinweze et al., 2012). Response by the Nigerian Government to manage these
6 sites (i.e. clean-up) has been unhurried, and the number of contaminated sites has grown
7 to over two thousand (Ite et al., 2013). Inaction has been driven by fragmented,
8 underdeveloped legislation (Ajayi and Ikporukpo, 2005), poor enforcement, and
9 mismanagement of stakeholder expectations (Ajayi and Ikporukpo, 2005; UNEP, 2011).

10 The United Nations Environment Programme (UNEP) identified the urgent need for
11 improvements to contaminated land policy in order to tackle contamination (UNEP,
12 2011). Improvements might include adoption of best practices or learning lessons from
13 countries that have established effective land contamination management policies (Sam
14 et al., 2015). The United Kingdom (UK) and the United States of America (USA) are
15 examples of countries with well established legislation that addresses legacy and newly
16 contaminated sites, incorporates stakeholder expectations, and integrates the principles
17 of sustainability (Nathanail et al., 2013; Hou et al., 2014). The process of emulating or
18 replicating established policies from other countries is referred to as policy transfer
19 (Rose 1991; Rose 1993; Dolowitz and Marsh 1996; Stone 2001).

20 1.1 Policy transfer

21 Many factors might motivate a country to carry out a policy transfer, e.g. absence of
22 policy (Rose, 1993), ineffective policy (Page, 2000), technical inability to implement a

23 policy (Dolowitz and Marsh, 1996), lack of resources, or desire to improve existing
24 policy (Page, 2000). In all instances, policy transfer is used to learn lessons from the
25 experiences of other countries (Bache and Taylor, 2003; Evans, 2006). Policy transfer
26 has been applied in different contexts, e.g. in politics to improve political administration
27 (Conde Martinez, 2005), in finance to improve monetary policy (Bulmer and Padgett,
28 2005), in land contamination management to reduce risks to human and environmental
29 health (Luo et al., 2009). Specific to contaminated land management, Cameroon and
30 China are two examples of countries that have emulated the institutional frameworks of
31 other countries (i.e. UK) in efforts to improve their own systems (Luo et al., 2009;
32 Forton et al., 2012; Coulon et al., 2016). To our knowledge, there exists no published
33 evidence that measures the success of these programmes, yet despite this absence, land
34 contamination experts continue to urge countries with perceived ineffective policies to
35 explore collaboration with international expertise (Brombal et al., 2015; Coulon et al.,
36 2016).

37 How countries transfer policies will depend on the differences between administration
38 and governance frameworks (e.g. procedures, expertise and experience) (Dolowitz and
39 Marsh, 1996), institutional structures (e.g. a multi-agency system of governance as
40 against unitary), policies (e.g. policy goals) (Evans, 2006), socio-cultural factors (e.g.
41 social values and expectations) (Page, 2000), and economics (e.g. sufficient funding,
42 economic priorities) (Peck and Theodore, 2001; Benson, 2009; Evans, 2009). If
43 differences between the transferring and adopting countries are too great, then it is
44 likely that policy transfer will not be successful (Dolowitz and Marsh, 1996).

45 When a country is transferring a policy to improve existing policy, policy compatibility
46 can become an issue (Atela et al., 2016). Compatibility can be influenced by socio-
47 cultural effects (Dolowitz and Marsh, 1996; Rose, 1993; James and Lodge, 2003) that
48 will vary within and across nations and states (Peck and Theodore, 2001). If the cultural
49 values of two countries differ too greatly (e.g. introduction of a risk-based policy into a
50 risk-averse culture), there might be resistance to transfer (Bache and Taylor, 2003,
51 Evans, 2009). To overcome this resistance, inputs from different stakeholder groups
52 (e.g. the public, policy makers, experts) might be sought and leveraged to contribute
53 towards the working of a unified solution (Ramirez-Andreotta et al., 2014). Public
54 engagement strategies have been useful in this respect (Curtain, 2003). To our
55 understanding few policy transfer studies have sought to understand the contextual
56 differences between countries that might influence a successful transfer (Forton et al.,
57 2012; Brombal et al., 2015).

58 In this paper, we address this gap in the literature and describe a method to collect
59 information about the socio-cultural values held by a local population in the Niger
60 Delta. We explore the differences in socio-cultural values among and between multiple
61 stakeholders affected by contaminated land in the Niger Delta. Using stakeholder
62 engagement methods we will identify, assess, and characterise these values and present
63 conclusions to benefit future policy transfer processes.

64

65

66 **1.2 Stakeholder engagement**

67 Stakeholder engagement has been used to inform, consult, involve, collaborate with,
68 and empower affected people involved in a decision making or policy-forming process
69 (Rowe and Frewer, 2005; IFC, 2007; Cundy et al., 2013; Ramirez-Andreotta et al.,
70 2014). Integrating multiple viewpoints should improve the quality of a decision (Reed,
71 2008), provided the process includes a clear definition of objectives, identifies the
72 relevant stakeholder groups, and promotes empowerment, equity, and partnership
73 (Geaves and Penning-Rowsell, 2016).

74 Methods for stakeholder engagement must be meaningful, accessible, e.g. use a
75 common language that is understandable to all stakeholders (Ramirez-Andreotta et al.,
76 2014), and culturally appropriate (Cundy et al., 2013). Efforts must be made to avoid
77 issues like social framing (Buhr and Wibeck, 2014), exclusion of individuals (Cox,
78 2012), or misinforming the public (Wodschow et al., 2016). Protocols to conduct
79 stakeholder engagement have been designed to ensure that public knowledge and social
80 values are considered alongside technical and scientific information (IFC, 2007; Reed,
81 2008; Cundy et al., 2013; World Bank Group, 2014). Protocol deployment must be
82 sensitive to country specific socio-economic conditions (e.g. technology availability) to
83 avoid hindering the engagement process (Chess and Purcell, 1999). Also important is
84 the consideration of cultural differences. For example, individuals in Nigeria often
85 prefer physical contact during communication (Lawrence, 2002; Idemudia, 2014; Aluko
86 et al., 2015) and any engagement that might limit contact between individuals (e.g.
87 online surveys) might make stakeholders reluctant to participate in the process, or might
88 exacerbate feelings of exclusion and distrust (Boele et al., 2001; Okoh, 2007).

89 Increasingly, African countries recognize this need and have integrated face-to-face
90 contact into guidance for stakeholder engagement (Department of Environmental
91 Affairs and Tourism, 2002; Department of Water Affairs, 2012; Obasi and Lekorwe,
92 2014). Because Nigeria lacks a published stakeholder engagement framework for policy
93 development (Adomokai and Sheate 2004), we have chosen to adapt accepted
94 approaches used by the International Finance Corporation and the World Bank Group
95 (IFC, 2007; Reed, 2008; Cundy et al., 2013; World Bank Group, 2014).

96

97 **2 Study context — Nigerian Niger Delta**

98 Our study area, the Niger Delta region (Figure 1), was chosen for its high number of
99 hydrocarbon contaminated sites, the breadth of affected stakeholder groups, and the
100 duration of exposure (more than fifty years) (UNEP, 2011). Approximately 31 million
101 people inhabit the Niger Delta, which includes approximately forty different ethnic
102 groups that speak over 250 different languages and dialects (NDDC, 2006).
103 Economically, inhabitants are most likely to be engaged in agriculture, food production,
104 or fisheries (UNEP, 2011; Chinweze et al., 2012), however the area also contains vast
105 oil reserves (OPEC, 2015). Exploitation of these reserves has led to the region
106 becoming a hub of oil extraction and processing. As a consequence of this activity, soil,
107 surface water, and groundwater has become contaminated and this has led to economic
108 hardship for the local population due to the loss of soil function, destruction of
109 farmlands, and loss of access to clean drinking water (Zabbey, 2004, Kadafa et al.,
110 2012; Umukoro, 2012; Pegg and Zabbey, 2013).

111

112

113 INSERT FIGURE 1

114

115 **3 Methodology for stakeholder engagement**

116 We have adapted the five-step stakeholder engagement framework promoted by the IFC
117 and World Bank Group (IFC, 2007; Cundy et al., 2013; World Bank Group, 2014) to
118 identify and gather information about social values related to hydrocarbon pollution in
119 the Niger Delta Region. The process is described in Figure 2.

120

121 INSERT FIGURE 2

122

123 The framework was modified to overcome three potential barriers related to
124 communication style, language, and understanding (Table 1). We addressed each
125 potential barrier by varying our techniques. A discussion about the impact of these
126 changes on the engagement process is presented in the Discussion section.

127

128 INSERT TABLE 1

129

130 **3.1 Plan and prepare**

131 Stage 1, Plan and Prepare, is the first developmental stage in a stakeholder engagement
132 and is underpinned by three activities:

133 **1) Preliminary planning:** Here the scope of the study is defined (e.g. who should be
134 engaged, how should they be engaged, what will they be engaged about, and to what
135 extent will they be engaged), a statement of objectives is made, and available resources
136 to conduct the engagement are assessed (Cundy et al., 2013; Rangarajan et al., 2013). In
137 this study we identified four key stakeholder groups, community members, experts,
138 regulators, and operators, that we believed held a stake in contaminated land
139 management in the Niger Delta region (UNEP, 2011; Kadafa, 2012; Idemudia, 2014).

140 Stakeholder communication preferences were expected to include contact and
141 discussion (Idemudia, 2014), therefore we modified our engagement method to include
142 face-to-face interviews and workshops. Because face-to-face interviews are resource
143 intensive, we limited interviews to those individuals unable to attend the workshops
144 (regulators, experts, operators). Workshops were used to cater to large groups and were
145 only attended by the public.

146 **2) Development of a list of values:** Here we developed a list of values (socio-cultural,
147 economic, and environmental) that might be important to stakeholders. A critical review
148 of the academic literature was initially conducted using academic (e.g. Science Direct,
149 Scopus) and online databases (e.g. Google Scholar). Key phrases and words, such as

150 values, impacts, oil spills, land contamination, socio-economic and environmental
151 impacts, stakeholder values, stakeholder concerns, contaminated land concerns, Niger
152 Delta, Nigeria were used to identify relevant articles.

153 **3) Organisation and validation of the identified values**: Here we finalised our list of
154 values. Similar terms and phrases were grouped together (Table 2), and then validated
155 through a single unofficial discourse with contaminated land experts from Nigeria.
156 Experts identified values that they believed would most likely be important and
157 recognized by stakeholders in the Niger Delta. This final list formed the basis for the
158 stakeholder engagement process.

159

160 INSERT TABLE 2

161

162 **3.2 Inform and consult**

163 Stage 2, Inform and Consult, identified participants for the engagement process.

164 Participants were identified from the oil-impacted regions of Nsisioken, Ogale, Kpean

165 and Kwawa (Figure 1) and included community members, experts, regulators, and

166 operators. Experts were individuals with extensive contaminated land experience gained

167 through either research or their occupation and were selected from a list of individuals

168 who participated in the UNEP risk assessment of Ogoniland report (UNEP, 2011).

169 Operators were identified from oil companies operating in the Niger Delta region.

170 Regulators (policy makers) were individuals who worked within the Department of

171 Petroleum Resources at the time of the study. Community members were gathered using

172 a snowball sampling approach, whereby an initial group of participants shared

173 information about the workshops with friends, relatives, and other community members.

174 A town crier was used (when available) to further the reach of the invitation. This

175 approach has been used previously to increase the number of participants attending

176 stakeholder engagement workshops (Noy, 2008; Rizzo et al., 2015). Only individuals

177 with prior knowledge about hydrocarbon contaminated land (i.e. those that have

178 experienced or lived with hydrocarbon contaminated land) were chosen to participate in

179 the study. All individuals provided their consent prior to engagement. Participation was

180 on a voluntary basis and individuals' identities and responses were made confidential

181 and anonymous respectively.

182 We used a primary contact (or sympathetic representative) to build trust with
183 stakeholder groups by having the contact communicate the benefits of our study to the
184 region, the legitimacy of the study approach, and the value of the study outcomes. The
185 contact person was also responsible for identifying a suitable venue (for the workshop),
186 and arranging a date and time for the engagements.

187 **3.3 Engage**

188 Stage 3, Engage, is the actual process of interacting with the participants. Our
189 stakeholder engagement method combined workshops and interviews. Workshops were
190 attended by the public (n = 35), while interviews were used to gather data from
191 operators (n = 7), regulators (n = 8), and experts (n = 6). All engagement activities were
192 conducted between July 2014 and December 2014. Similar questions were used for both
193 the workshops and the interviews (Table 3). The questions were divided into two
194 sections: the first section aimed to investigate social values, and the second section
195 explored the knowledge and perceived effectiveness of current contaminated land
196 regulation in Nigeria. Probing questions were used to explore the depth of participants'
197 knowledge about different subjects (e.g. we asked operators why they lacked knowledge
198 of contaminated land management in other countries despite working for an
199 international organisation).

200

201

202 INSERT TABLE 3

203 A pilot study was used to assess the clarity and understanding of the questions. A small
204 group of students from the Ogoniland community of Luere-Beeri reviewed the
205 questions and suggested that the public would not be aware of contaminated land
206 regulation in Nigeria. As a result, we did not ask these questions of the public.

207 The workshop took place August 2014 at the community town hall in Ogale. Thirty-five
208 people attended the workshops (twenty in the morning session; fifteen in the afternoon
209 session). At the workshop, participants worked in groups of five people. English was
210 the main language of communication. Regional languages were used for participants not
211 comfortable with English. The workshop facilitator was fluent in English and several
212 other regional languages. The duration of each workshop was two hours.

213 Data on social values was collected using postcards. The postcards were used to present
214 graphical depictions of the different social values presented in Table 2, and this was
215 done to overcome potential barriers in language and comprehension (Zhao et al., 2016).

216

217 Participants prioritised the social values through a two stage process. In the first stage
218 participants were allowed thirty minutes to discuss each of the social values (postcards)
219 in a group, followed by identification of the three most important values by consensus.

220 The second stage asked participants to assign an ordinal rank to these three values.

221 Outputs were fed back to the entire workshop by a single group representative. Final
222 ordinal rankings for all groups (and interview participants) were averaged.

223 Accompanying the prioritisation exercise was a series of open-ended, facilitated
224 questions (e.g. “How might you assist other stakeholders to help with the clean-up of
225 contaminated land if you had the chance?” and “How can the Government help the
226 people in the affected region?”) that were used to reveal subjective beliefs held by the
227 participants. Answers were captured using an electronic voice recorder and transcribed
228 for later analysis. A question and answer feedback session closed the workshop.

229 **3.4 Data analysis**

230 Statistical analysis was performed on the quantitative data derived from the closed
231 ended questions (for both workshops and interviews). Qualitative data derived from the
232 workshops and interviews was captured using audio devices, transcribed, and analysed
233 using the thematic content analysis methodology described by Sandelowski (1995) and
234 Krippendorff (2012). In brief, transcribed text formed the raw data that was divided into
235 segments of text, which shared similar themes. Thematic codes were used to describe
236 these text segments and the frequency of code appearance was calculated (Braun and
237 Clarke, 2006). Consistency was validated by the second author (an expert in
238 contaminated land) who reviewed the coding rules and a sample of the assessed data as
239 recommended by Carey et al., (1996).

240 **4 Results and discussions**

241 **4.1 Stakeholder demographics**

242 Stakeholder demographics (Table 4) were broadly consistent with the demographics of
243 the Niger Delta region as a whole, which has a male to female ratio of 54:46 (NDDC,
244 2006). The majority of the participants (64%) were between the ages of 40-59 years,
245 which is the most literate age group in the region with a literacy rate of 78% (NDDC,
246 2006). All participants confirmed some direct or indirect experiences with hydrocarbon
247 pollution. In many instances, community members who attended the workshops had
248 lived with hydrocarbon contaminated land since birth. A workshop participant shared
249 this direct experience: *“Since I was born I have been living here, I am almost 60 years*
250 *in age. What experience about oil spill sites do you still want me to have? I have*
251 *experienced it all my life”*. Interview attendees, on the other hand, had a mix of direct
252 and indirect experience and many had upwards of ten years of experience working with,
253 or managing oil spill contamination.

254

255 INSERT TABLE 4

256 **4.2 Appropriateness of the engagement technique**

257 Despite the region’s relatively high literacy rate, there was a risk that workshop
258 participants might not comprehend, or might misunderstand, the written text used to
259 communicate social values. We used postcards to overcome this limitation as a means
260 to simplify communication for the benefit of comprehension (Klein et al., 2016). In
261 general, our approach was well received, but some individuals felt that the graphics on
262 the postcards could have been more specific in order to communicate a stronger

263 message. A workshop participant noted: *“the images on the photo cards are good but*
264 *they are soft. They are not strong enough to explain the pains we pass through. We*
265 *drink polluted rain water from our roof but you just have health and safety”*(community
266 *member*).

267 Stronger language, in this instance, referred to more specific language, for example, the
268 use of terms such as ‘cancer causing’, to describe health. Though this type of language
269 might have satisfied the participant’s language preferences, this approach might have
270 prejudiced the overall engagement process by overstating the severity or scale of an
271 effect, or suggesting a pollutant-health linkage that might not exist.

272 Our use of subtle language (i.e. health and well being) was also perceived to potentially
273 undervalue the full extent of the actual harm. One workshop participant expressed this
274 sentiment: *“oil spill has made us suffer from diseases in the past and the present. We go*
275 *to the hospital almost all the time. Mere saying health/wellbeing on the photo card is*
276 *not strong enough”*. It is not possible, however, to depict the entirety of effects (impact,
277 severity, scale) on a single card, which is why we used facilitators to engender richer
278 discussion about effects.

279 If we take the perspective that the cards were used to enhance comprehension and
280 stimulate wide-ranging discussion, then our approach was successful and was supported
281 by a regulator who said during an interview: *“We are aware that the people suffer more*
282 *severe impacts, however your photo cards represent the issues associated with*
283 *contaminated land in the area”*. We acknowledge that the ability of postcards to depict
284 all impacts is limited, however, our method did not inhibit discussion and we
285 hypothesise that the combined use of language and graphics to describe social-cultural
286 values related to contaminated land can promote wide-ranging discussions and garner

287 participant willingness to contribute, which ultimately benefits the policy transfer
288 process.

289 **4.3 Determining stakeholder priorities**

290 Insight about perceived socio-cultural priorities between different stakeholder groups
291 was determined by comparing participants' rankings of those socio-cultural values.

292 Participants from all stakeholder groups assigned priority votes to the following values
293 (in descending order of total votes received): drinking water quality, soil quality, food
294 and local supply chain, human health/wellbeing, loss of biodiversity, communal crisis,
295 resource conservation, future generation, collaboration/co-existence, cultural places
296 (Figure 3). Three social values did not receive votes: family and household, reputation,
297 and financial issues/income security. Values that received few or no votes were not
298 considered unimportant by the participants; rather, they found it difficult to prioritise
299 values that did not have an immediate impact on their lives, as stated by a workshop
300 participant: "*...it is difficult to think or prioritise other values because we cannot*
301 *satisfy ourselves not to talk of legacy for future generation. We need to eat first before*
302 *thinking of next generation*".

303

304 INSERT FIGURE 3

305

306 We assessed differences in ranked order between the stakeholder groups using a t-test
307 and our results show that variances in the priority rankings between stakeholder groups
308 were not statistically significant ($p > 0.05$). Differences between stakeholder priorities
309 might reveal a potential barrier to shared decision making, however, our findings
310 suggests that stakeholders share a similar perspective and understanding about the

311 impact that hydrocarbon pollution has on socio-cultural values. Snape et al., (2014)
312 suggested that common goals and understanding between groups is more likely to result
313 in consensus building, trust, and shared decision-making and on the whole this would
314 appear to be the case.

315 Despite the fact that all stakeholders acknowledged the existence of hydrocarbon
316 pollution and its impact on water and health, as one expert stated: *“We understand what
317 the problem of oil spill is, majorly drinking water and the health of the people ...it could
318 vary but these are most important”*, the basis of prioritisation between stakeholder
319 groups differed. We observed that priority was not based on an absolute assessment of
320 harm, but rather an assessment based on specific stakeholder needs or responsibilities.
321 For workshop participants, priority was often determined based on the presumed effect
322 that hydrocarbon pollution had on their ability to meet their basic needs for day-to-day
323 survival. One workshop participant said: *“if you have to provide us now with anything,
324 clean water and occupation is the most important right now”*. A second workshop
325 participant added: *“We need drinking water first, then something to do to earn money
326 since the farms are no longer yielding”*. A third workshop participant rationalised their
327 ranking as such: *“for our community to survive and want to keep land or river for the
328 next generation, we have to be alive first”*. Based on these comments, we surmise that
329 the people in affected regions are likely in need of basic services (e.g. clean water,
330 employment) and we hypothesise that if the most basic and immediate needs of a group
331 are not being met that they will be unable or unwilling to prioritise temporally long-
332 term values. This hypothesis is supported by our results whereby temporally long-term
333 values, such as biodiversity loss and future generations, received low priority scores.

334 Other stakeholder groups recognize the tendency to prioritise based on need and
335 immediacy, as one regulator commented: “*well I would say biodiversity is important to*
336 *us as regulators but the people are more interested in what gets to them now and satisfy*
337 *them*”. This comment, however, reveals how regulators, for example, assign priority
338 differently than the public. In this instance, regulators appear to assign priority based on
339 their organizational responsibility or mandate. A similar comment was made by another
340 regulator responsible for the protection of human and environmental health: “*There are*
341 *two issues to consider in this prioritisation, one is the people who are suffering due to*
342 *oil spill and another is our responsibility as a regulator*”. Furthermore, operators
343 assigned priority based on organizational mandate, for example, best practice or
344 national regulation: “*As an international organisation we ought to imbibe best practice*
345 *to protect people and the environment and ensure the people are happy*”.

346 Though ranked priorities between groups were similar, we would not promote this result
347 as an indicator of harmony due to the foundational differences between how different
348 stakeholder groups make decisions. To improve the likelihood of a successful policy
349 transfer, we therefore suggest that meaningful stakeholder engagement be conducted
350 across stakeholder groups to enhance appreciation of the differences in decision making,
351 which has been shown to improve trust and shared decision making on the whole
352 (Snape et al., 2014). Operationally, we believe that future contaminated land policies
353 should address issues in a sequential order (short-term priorities first) in order to build
354 trust and acceptance among stakeholder, as well as enable stakeholders to then consider
355 management of long-term issues.

356 In the following sections we provide a more detailed analysis focused on the top ranked
357 priorities.

358 **4.3.1 Safe drinking water**

359 Safe drinking water was the highest ranked social value across all stakeholder groups
360 (Figure 3). The majority of the local population lacks access to safe drinking water
361 (Etim et al., 2013; Daminabo and Frank, 2014) and workshop participants noted this
362 daily challenge stating: *“Our water is polluted all the time by oil spills and this has
363 made us suffer different sicknesses. Water is a serious issue in our community because
364 of oil spill. We drink water with oil and rainwater is bad”*. A second workshop
365 participant followed: *“When rain falls, we cannot drink because it is black, and the
366 water from the rivers smells crude oil and the one from the wells have oil on the
367 surface. We have no alternative but to buy good water”*. Options for the public to access
368 clean water are limited. Commercial water vendors are expensive and they sometimes
369 provide untreated water that is unsafe for consumption (Akpabio et al., 2015; Ansa and
370 Ukpong, 2015). Safe drinking water is thus a multiplex issue that threatens the health
371 and wellbeing of individuals, as well as their economic viability (Nganje et al., 2015).
372 Operators and regulators are well aware of these issues as expressed by an operator:
373 *“truly, portable drinking water is perennial problem in the communities. Each time we
374 go for field work we pity the community people because of the kind of water they drink”*.
375 This issue highlights the need for multiple policies to operate in concert. Nigeria’s
376 national water policy, which aims to ensure availability, conservation, and equitable
377 distribution of safe water resources to the population (FGN, 2004) has not achieved its
378 goals due to weak enforcement and implementation (Nwankwoala, 2014). Transfer of

379 contaminated land policy that could complement existing water policy might provide a
380 correlated benefit.

381 **4.3.2 Soil quality**

382 Agriculture, responsible for economic and nutritional sustainability in the region, is
383 reliant on good soil quality. A workshop participant expressed this relationship by
384 stating: “*farming is the major occupation around here, it serves for food and also we*
385 *sell our crops to earn money*”. Studies have shown that regional hydrocarbon
386 contamination has reduced soil quality (Okeke and Okpala, 2014), and subsequently
387 agricultural yields (Oyebamiji and Mba, 2013). Stakeholders also recognise the intrinsic
388 link between soil quality, agriculture, and livelihood, as expressed by an operator: “*It is*
389 *very obvious that the hardship in the area is as a result of the inability of the people to*
390 *farm*” and have expressed concern about the longevity of contamination, as one
391 regulator stated: “*when you go to oil producing communities you will know we are not*
392 *doing enough. Farmlands are polluted for years Even some areas that they said they*
393 *have cleaned, the people have not been able to farm there*”. Current contaminated land
394 policy does not adequately address contaminant levels in agricultural soil. Existing
395 generic soil standards are limited in description and poorly enforced due to a multitude
396 of factors such as lack of funding, expertise, and institutional coherency (Ajayi and
397 Ikporukpo, 2005; Ambituuni et al., 2014; Sam et al., 2015).

398 More regulation will not overcome this problem; however, the transfer of a more
399 focussed policy might be beneficial. For example, Nigeria could adopt policy that
400 prioritises prompt response to, and restoration of, contaminated sites, similar to the
401 approaches used by the UK, USA and Canada (Nathanail et al., 2013) and Cameroon

402 (Forton et al., 2012). However, Nigeria lacks the resources to implement such a system.
403 Alternatively, Nigeria could rely on input from stakeholders and citizens to report spills,
404 coupled with a site prioritisation tool (e.g. see Sam et al., 2017) to compare and contrast
405 the risk posed by different spills, thus enabling targeted restorative activities. In this
406 manner, less resource (i.e. government personnel) would be required to identify spills,
407 on the ground reporting would provide rapid site identification, and clean-up resources
408 would target the worst sites first.

409

410 **4.3.3 Food and local supply chain and human health**

411 Hydrocarbon contaminated water and soil have reduced the capability of local
412 producers to supply nutrition, which in turn has affected individuals' health (Babatunde
413 et al., 2015; Nriagu et al., 2016). A workshop participant explained this relationship
414 stating: *"it is very difficult for us to survive. Sometimes we eat food from our farmlands*
415 *and we get sick. We do not know what the cause is, but we experience this when oil spill*
416 *became frequent on our cultivated farmland"*. Farmers are often unable to transfer their
417 agricultural production to non-contaminated soils, leaving them few options but to
418 continue production on contaminated soils as noted by one operator: *"Since they have*
419 *no other option but to feed on polluted land, they are likely to get sick when they feed*
420 *from such produce"*. Contaminated seafood (e.g. shrimp and fish) also continues to be
421 consumed despite the pollution, as noted by a workshop participant: *"The problem with*
422 *oil spill is that it kills fishes. Whenever spill occurs we pick fishes from the shores and*
423 *as we cook and eat, they spill crude oil. Each time we eat these fish we suffer one*
424 *sickness or the other"*. Without available alternatives, the local population will continue

425 to consume these products and suffer the attendant health impacts (Amirah et al., 2013,
426 Nriagu et al., 2016).

427 Government's inability to respond to oil spills in a timely manner is exacerbating this
428 issue (Pegg and Zabbey, 2013; Akpan, 2014), as one regulator explained: "*sometimes*
429 *before we get into the communities to educate them about effects of eating or selling*
430 *such fish, the deed is already done. Moreover, it is difficult to regulate these things due*
431 *to the economy*". Time to response might be improved through local involvement to
432 identify and report spill incidents, similar to practices in the USA where a network of
433 professionals communicate contaminated land emergencies and hotspots (sites that
434 require urgent attention) to the USEPA (CERCLA, 2002).

435

436 **4.4 Stakeholder concerns about contaminated land**

437 A thematic analysis was performed on the outputs from the workshops and interviews to
438 understand the peripheral concerns of stakeholders regarding contaminated land (Table
439 5). The most frequently mentioned concern identified by the public (Figure 4) related to
440 economic loss, which might be expected given the integral role of agriculture in the
441 day-to-day life of the local population (Pegg and Zabbey, 2013; UNEP, 2011).

442

443 INSERT FIGURE 4

444

445 Operators referred most frequently to participation and cooperation, as one operator
446 explained "*We want peace in the land but if the communities continue to fight and*
447 *threaten our workers there is very little we can do. This affects our operations.*"

448 Maintaining confidence and trust between stakeholders is critical for business success
449 (Elenwo and Akankali, 2014). Regulators most frequently mentioned their inability to
450 mitigate environmental degradation and to promptly clean-up spill sites. One regulator
451 expressed this disappointment: “*When you go to oil producing communities you will*
452 *know we are not doing enough. Farmlands are polluted for years Even some areas*
453 *that they said they have cleaned, the people have not been able to farm there*”. Experts
454 most frequently identified economic loss and clean-up during discussions.

455

456 INSERT TABLE 5

457 Overall, stakeholders held the view that existing regulation to manage contaminated
458 land was ineffective. A contaminated land expert suggested reasons for this
459 ineffectiveness were: *“We (Nigeria) don’t have the technical expertise, we might have
460 the knowledge theoretically but practically no, because for you to achieve the desire
461 result within the framework of international best practice, you need certain things in
462 place”*. Adoption of international best practice, via policy transfer, could improve the
463 effectiveness of Nigeria’s policy, however, transferred policy must be contextualised for
464 a Nigerian audience, as noted by an expert: *“Well, a stark jacket transfer of policy
465 should be discouraged”*. We suggest that stakeholder engagement could be used to
466 provide initial understanding about socio-cultural values to aid contextualisation, and
467 this should be accompanied by additional political and governance contextualisation.

468 Political differences between policy transferring countries might include conflicting
469 political goals or ideals (Evans, 2006). In Nigeria, the central political challenge is a
470 general lack of political will to tackle contaminated land in the region, as one expert
471 stated: *“Yes I foresee a barrier because there is no political will (for contaminated land
472 management). If there was a political will in favour of the people, what I mean by a
473 political will, a desire by the politicians to do the right thing for the people”*. Culturally,
474 Nigeria is diverse, particularly the Niger Delta region which consists of nine states, each
475 with their own cultures, policies, and economic strategies (NDDC, 2006). Cultural
476 practices, such as the sanctity of shrines, could, for example, pose an impediment to
477 prompt spill response, containment, and restoration. As one expert explained: *“...I
478 wouldn’t assume that in the United Kingdom, they still have places that they consider as
479 shrines for worshipping but in Nigeria we strongly still have places like that; and if*

480 *there is spill and you go there; first, you cannot even attempt to clean up unless the*
481 *priest in charge of that shrine is consulted*". Adoption of prompt spill response policy,
482 the foundation of UK contaminated land policy (DEFRA, 2012), might erode trust
483 between Nigerian stakeholders and therefore must be considered during policy transfer.

484 Corruption (e.g. taking bribes) and unprofessional behaviour (e.g. aggressive lobbying)
485 can lead to reduced regulatory compliance and can limit the effectiveness of policy
486 transfer (Eneh, 2011;Adekola et al., 2015; Rim-rukeh, 2015). Corrupt practices have
487 been shown to systematically impede the enforcement of existing contaminated land
488 management policy (Idemudia and Ite, 2006; Edoho, 2008). Though our analysis did not
489 investigate corruption specifically, it did reveal an appetite to eliminate this behaviour,
490 as expressed by one operator: *"Our responsibility is to work according to available*
491 *policy. We desire a policy that discourages corrupt practices*". Strengthening laws and
492 closing loopholes might overcome corruption, as one regulator explained: *"we have*
493 *made request for the laws to be reviewed and strengthened; probably this will address*
494 *the loop holes and consequent corrupt acts*", but elimination of systemic corruption will
495 require a considerably greater effort than the strengthening of a single policy.

496

497 **5 Conclusion**

498 Nigerian contaminated land policy has been deemed ineffective and improvements
499 might come by way of policy transfer mechanisms. Successful transfer of policy from
500 one country to another requires the recipient country to modify, or contextualise, the
501 policy accordingly. To do so requires an understanding of the socio-cultural priorities of
502 affected stakeholders. In this study, we showed that community members, regulators,

503 experts, and operators similarly valued water quality, soil quality, and food production.
504 Despite this consensus, how stakeholders arrived at these conclusions differed. Our
505 findings also revealed the potential for barriers such as political and cultural issues,
506 regulatory structure, and corruption to affect the adoption and implementation of policy
507 transference. We also presented a mixed methods engagement strategy modified for a
508 Nigerian audience, which could be used by policy makers to gather data about socio-
509 cultural values in support of policy transference. We believe that differences between
510 transferring entities should not prevent the use of policy transfer, for example,
511 contaminated land policy from economically prosperous regions, e.g. UK and USA, to
512 Nigeria. Policy transfer in this instance should be possible provided policy makers
513 integrate stakeholder values and governing nuances accordingly.

514

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518

519

520 **7 References**

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- 749

List of Figures and Tables

Figure 1: Map of Africa showing the Niger Delta (red box). Enlarged map shows the states that make up the Niger Delta region.

Figure 2: Graphical representation of the framework used in this study to collect information from stakeholders about socio-cultural values related to hydrocarbon pollution and contaminated land policy transfer in Nigeria.

Figure 3: Stakeholder voting preferences as a percentage of total votes for each of the social values. Values are ordered according to rank of importance from left to right with Drinking water quality deemed the most important value. Family and Household, Reputation, and Financial/Income Security values were the least important and received zero votes.

Figure 4: Summary of themes derived from the analysis of stakeholders' concerns about oil-contaminated sites in the Niger Delta. X-axis measures the frequency of thematic mentions made by the different stakeholders.

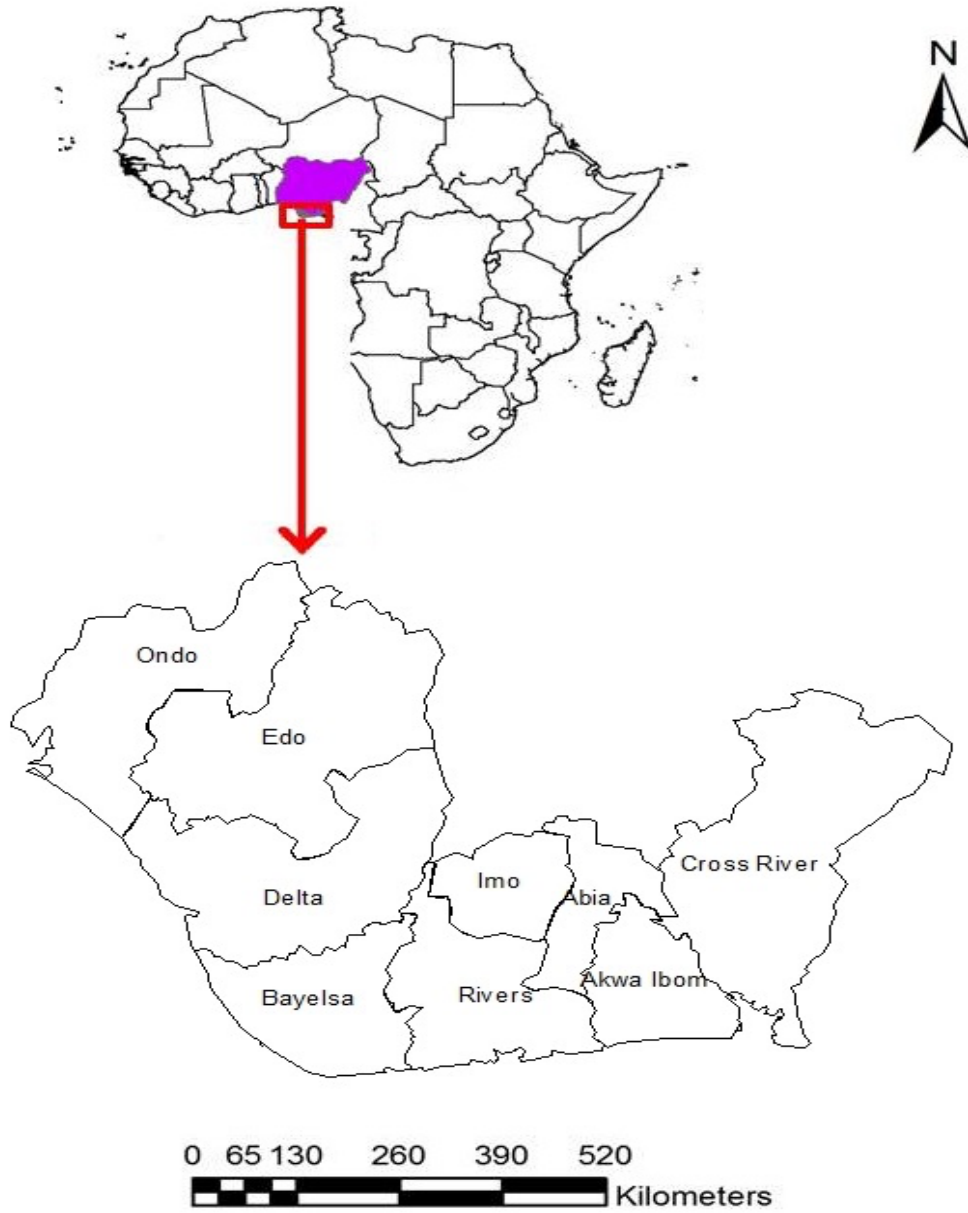
Table 1: Challenges that might effect stakeholder engagement and proposed solutions based on the literature.

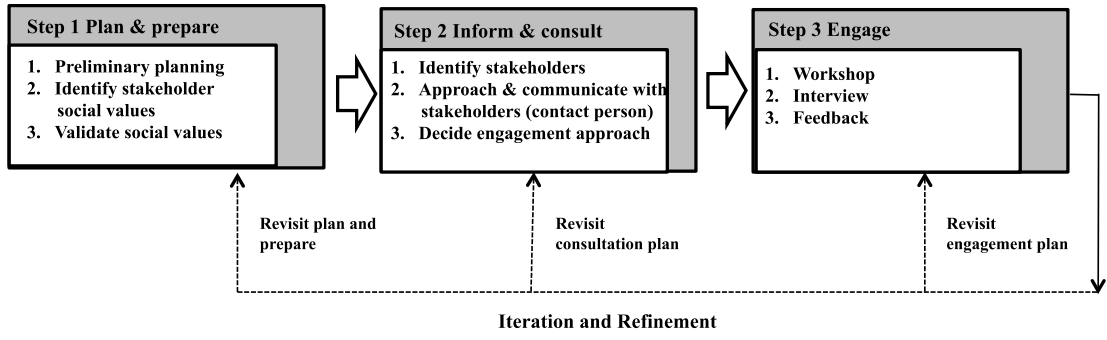
Table 2: Summary of stakeholder values as identified from literature and validated by experts.

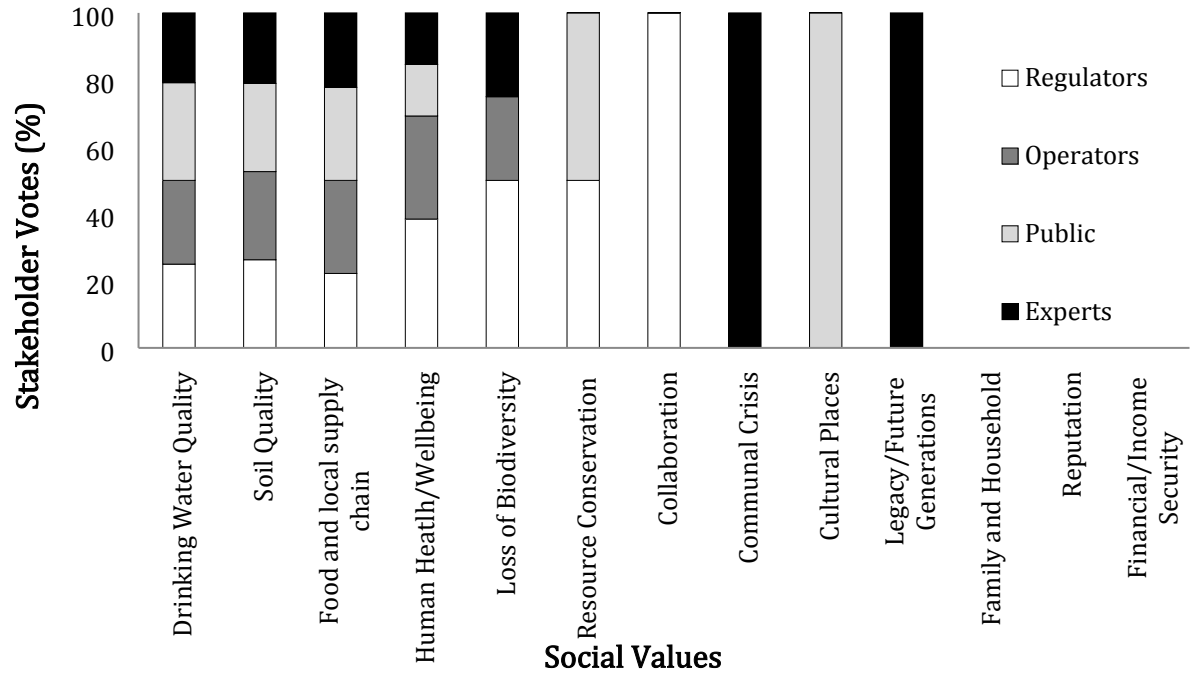
Table 3: Questions used in this study to gather information about stakeholder knowledge about contaminated land management.

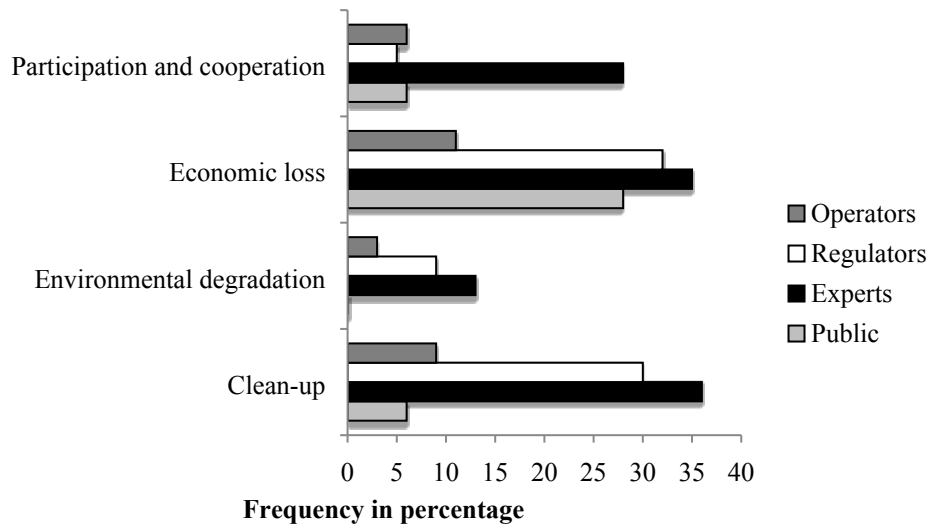
Table 4: Demographic breakdown of stakeholder participants.

Table 5: Summary of the themes, definitions, and quotes generated from the thematic analysis.









Identified challenges	Proposed solutions	Reference
Less technological-driven context	Town crier, face to face (rather than survey)	Amadi et al., 2014; Ohuruogu et al., 2015
Language/comprehension	Postcards, multi-lingual, workshops	Lewis and Sheppard, 2006; Jude, 2008; Idemudia, 2014b
Negotiation and persuasion	Face to face contact (discussions)	Ihugba and Osuji, 2011; Idemudia, 2014a; Aluko et al., 2015

Values	Elements	Description
Socio-cultural	Communal crisis	A crisis that exists between communities, oil companies and government
	Cultural places	Might include places of worship or cemeteries
	Family and household	Children, parents and relatives
Environmental	Drinking water quality	Access to clean and safe drinking water
	Loss of biodiversity	Decrease in the quantity of flora and fauna
	Resource conservation	Protection of natural resources, e.g. fish, mangrove habitats
	Soil quality for agriculture	Maintenance of soil quality to enable agriculture production
	Food and local supply chain: farming and fishing	Safe supply of food, particularly fish and produce
Economic	Legacy for future generation	Long-term protection of the natural environment
	Human health/wellbeing	Maintenance of good health and wellbeing
	Financial issues/income security	Avoidance of financial loss
	Reputation	Of stakeholders' communities or institutions
	Collaboration/ co-existence	Working together between different stakeholder groups

	Question	Assessment scale	Rationale
1	Have you personal experience dealing or living contaminated land?	1=not at all; 5=considerable	To determine whether participants has contaminated land experience in order to be able to answer the questions.
2	Any other comments you wish to add on your experience?	Open ended	To explore stakeholder experiences
3	Confirm that images contained on postcards reflected stakeholder values.	Open ended	To validate stakeholder values and reach a consensus
4	Prioritise a set of postcards, choosing the first as most important and the last as least important	Line postcards up from worst to first	To determine stakeholders' priorities of values that are impacted by the presence of contaminated land
5	How might you assist other stakeholders to help with the clean-up of contaminated land if you had the chance" and "How can the Government help the people in the affected region?	Open ended	To reveal subjective beliefs held by the participants and to explore other social values that were not represented by the postcards that could be affected by contaminated land
6	How would you rate your knowledge about contaminated land management?	1=not at all; 5=considerable	To determine participants' knowledge of the contaminated land management regime in Nigeria
7	Are you satisfied with the Nigerian approach to land contamination management?	1=not at all; 5=considerable	To measure participants satisfaction with Nigeria's current approach to contaminated land
8	Please explain why you are satisfied or no	Open ended	To explore the reasons for participant's response,
9	How familiar are you with foreign contaminated land regulation?	1=not at all; 5=considerable	To assess if stakeholders had heard of other regimes so they could learn from them
10	Do you believe policy transfer from a foreign country or institution will work in Nigeria?	1=not at all; 5=considerable	To assess participants' willingness to accept policy transfer
11	Do you foresee any barriers preventing policy transfer?	Opened ended	To understand fears to policy transfer assuming a better policy was identified abroad

	Number of stakeholders	% of total
Sex		
Male	30	54
Female	26	46
Age		
18-25	3	5
26-39	10	18
40-59	36	64
60 and above	6	11
Missing	1	2

Main category	Themes	Sub themes	Theme definition	Example of quotes for each theme	Frequency of theme
Environmental issues	Clean-up	Timely response Restoration	Statements that connote the need for clean-up, land restoration and urgency of clean-up.	<i>“If I were the President I would ensure proper sanitation, we need some clean-up to wash the soil and ensure the soil is clean; if that is not immediately possible, Government can provide alternative source of water”</i>	81
	Environmental degradation	Pollution Environmental damage	Statements on pollution, impacts of oil spill, bunkering, sabotage activities and insecurity	<i>More than 95% of spillages in Ogoniland since 2012 are as a result of illegal bunkering and sabotage. The trend has caused untold devastation on the aquatic and agricultural sectors in Ogoniland</i>	25
Social/Economic issues	Economic loss and welfare	Livelihood welfare	Statements that suggest economic loss (livelihood) as a result of oil spill and express concerns about water, soil, health and safety	<i>“..their main source of occupation is farming and fishing and some cultural crafts like canoe making and so, they derive their livelihood from the environment, so if the environment is impacted, the quality of their socio-economic and cultural life will also be directly impacted”</i>	106
	Participation and collaboration	Stakeholder engagement cooperation	Statements that suggest the impact of stakeholder participation/collaboration in the decision making process.	<i>“Very importantly the three stakeholders in the spill of crude oil; which are the oil companies themselves the multinationals, the regulators and the communities where this oil is situated or where the pipelines transverse”</i>	45
	Unethical practices	Trust and transparency	Statements that concern corruption, trust and transparency between contaminated land management stakeholders	<i>“According to several authors in literature, the spills that have been reported so far, is just about probably half of what actually goes out into the environment in terms of spill. So it is never, it is never a proper mechanism”</i>	32
Policy transference	Regulation performance	Monitoring and implementation	Statements that concern regulatory performance, monitoring and implementation, as regards contaminated land decisions	<i>“Nigeria’s policies are ok, it is implementation that is a concern”</i>	59
	Political and cultural issues	Constraints	Statements that suggest resistance to transfer policy due to socio-cultural, political and economic issues	<i>“..Yes I foresee a barrier because there is no political will that is the major barrier. If there is a political will in favour of the people ...a desire by the politicians to do the right thing for the people”</i>	40

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