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Challenges to responsible forest governance in Ghana and its implications for professional education

Joana Ameyaw^{a,b,c,*}, Bas Arts^b, Arjen Wals^c

^a Faculty of Renewable Natural Resources, Kwame Nkrumah University of Science and Technology, Private Mail Bag, Kumasi, Ghana

^b Forest and Nature Conservation Policy, Wageningen University, P. O. Box 47, 6700AA Wageningen, The Netherlands

^c Education and Competence Studies, Wageningen University, P. O. Box 8130, 6700EW Wageningen, The Netherlands

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ABSTRACT

As forestry transitions from hierarchical steering by governments to more multi-actor forms of governance, it has become necessary to understand key challenges to improve forest governance and its implications for educating forestry professionals. This paper therefore investigates these challenges and explores capabilities forestry professionals require to overcome them. We employed mixed qualitative and quantitative methods. Data were collected through interviews, focus group discussions and a survey with forestry sector stakeholders. Qualitative data were analysed by clustering related issues into dominant themes and quantitative data by using Mann-Whitney U and Wilcoxon signed rank tests. Key challenges identified relate to political culture, particularly the power position of some elites in forest management and a culture of corruption. Non-compliance and poor enforcement of rules were also highlighted. To overcome these challenges, key capabilities forestry professionals require include leadership, authority and autonomy, alongside the capacity to initiate and manage change. We conclude that to improve forest governance in Ghana, beyond having state-of-the-art technical knowledge, professional education should place more emphasis on developing non-technical capabilities. We recommend an integrated approach to professional education that simultaneously develops knowledge, skills, attitudes and mind-sets necessary for producing graduates who can effectively address governance challenges.

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1. Introduction

Discourses on forest management have changed over time, with implications for the role of forestry professionals. Before the 1980s, forest management was mainly steered by the government. Government employed professionals – highly trained and self-responsible graduates (Boshuizen et al., 2004) – to manage forests. These professionals took major decisions on behalf of government, without much input or scrutiny from non-state actors (Kotey et al., 1998; Western and Wright, 1994). This government-led hierarchical form of forest policy and management however became unpopular, due to policy failures leading to deforestation and forest degradation, especially in developing countries (Agyarko, 2001; Ahenkan and Boon, 2010; Ascher, 1999). Since the 1980s therefore, there has been a discursive shift towards more interactive multi-actor forest governance (Arts, 2006).

Though there are failures associated with the more interactive forms of governance (Arnouts and Arts, 2009), they are believed to be more (cost-)effective and legitimate than hierarchical steering by governments

(Lindsay et al., 2002). To enhance the quality of governance generally and in forest management specifically, several criteria have been developed including the efficiency of resource use, sustainability, equity and the extent to which countries achieve forest-related development goals (Lancaster and Montinola, 1997). Governance that does not meet these requirements results in losses in government revenue, employment, and environmental services (World bank, 2009) and these are considered undesirable. Improving the quality of forest governance is however imbued with a number of challenges. Most research on improving quality of forest governance has focused on developing instruments/framework for monitoring and assessing governance with emphasis on strengths and weaknesses. Consequently, especially in developing countries, the weaknesses in forest governance are known but why these weaknesses persist, has been sparsely studied (Contreras-Hermosilla, 2011; Maletz and Tysiachniouk, 2009). This paper therefore seeks to contribute to understanding the underlying challenges affecting the capacity to improve governance and achieve responsible forest governance (hereafter indicated as RFG). An important factor in understanding of the challenges to achieve RFG is the required capabilities of forestry professionals who play key roles in forest governance. Temu et al. (2006) note that only few foresters are equipped with requisite skills to manage transformations in forest management. Some have researched into employers' expectations of today's graduates (Kammesheidt et al., 2007) and

* Corresponding author at: Faculty of Renewable Natural Resources, Kwame Nkrumah University of Science and Technology, Private Mail Bag, Kumasi, Ghana.

E-mail addresses: joanaameyaw@yahoo.ca, joana.ameyaw@wur.nl (J. Ameyaw), bas.arts@wur.nl (B. Arts), arjen.wals@wur.nl (A. Wals).

competencies for forestry graduates in general (Arevalo et al., 2010; Arevalo et al., 2014) but there is still a dearth of information on professional capabilities required for ensuring more responsible forest governance. Temu et al. (2006) emphasize the need to carry out comprehensive surveys to establish the current knowledge and skills gaps of African foresters (p.124). The United Nations Agenda 21 emphasizes the central role of education for sustainable forest management. The United Nations report (2012) on “resilient people, resilient planet: a future worth choosing” emphasizes the necessity of training and mentoring a new generation of forestry professionals who are able to think differently and create a sustainable future.

This paper therefore has a twofold objective: first, to identify and prioritize emerging challenges to responsible forest governance in Ghana and second, to explore professional capabilities required for addressing them. We studied the forest sector in Ghana for three reasons: 1) Forests in Ghana are dwindling at a fast rate (Oduro et al., 2014) partly due to poor governance practices; a situation requiring urgent informed intervention. 2) Training of forestry professionals in Ghana is struggling to remain abreast with the changing needs of the forest sector. 3) The first author is involved in the training of forestry professionals and the development of a centre of excellence in training natural resource governance professionals in Ghana. The results we provide should be treated as a starting point for a more exhaustive assessment of specific capability needs of forestry professional in order to realize (more) responsible forest governance.

In the next section, we give a brief description of professional forestry education in Ghana. We then discuss a theoretical framework for responsible forest governance. Subsequently, we present research methods, followed by the results and a discussion showing the implications of our findings for professional education and training. The last section offers a brief conclusion to the research.

2. Professional forestry education in Ghana

Professional forestry training started in Ghana in 1982, through the joint effort of the government and the then University of Science and Technology. The aim was to train highly skilled personnel to manage the forest sector. A three-year Bachelor of Science programme in Natural Resource Management was developed with specialisation options in four areas: silviculture and forest management, fresh water fisheries and watershed management, wildlife and range management and wood science and technology. A fifth specialisation option in agroforestry was introduced later in 2005. Opportunities were also made available for Master of Science, Master of Philosophy and Doctor of Philosophy programmes. The focus of forest management at the time was timber production (Kotey et al., 1998). Consequently, the curriculum was largely based on forest science and silviculture. Government was the main employer of graduates and there was close collaboration between the university and the then Forestry Department. Students admitted to the programme had many opportunities for practical field training.

A number of changes occurred in the early 1990s, which affected professional forestry training. First, there were changes in international discourses on the role of forests, emphasizing the importance of people in forest management. This led to a review in the university's curriculum. Professional forestry training became a four-year programme with courses in “social forestry” introduced to address managing forests with people, though it formed a small percentage of the curriculum. Second, the number of both male and female students graduating as professional foresters increased beyond government's ability to employ. This resulted from changes in national educational policies and an increase in the number of public and private universities offering courses in forestry. Consequently, many graduates had to find employment outside the government sector. Non-governmental organisations and the private sector now employ a significant number of professional foresters (Ackom, 2010). Thus the capability needs of these professionals are becoming diversified. Consequently, as is the case in Kenya (Arevalo et al.,

2014), Malaysia (Ratnasingam et al., 2013) and other countries, universities seek to review and create new curriculum which addresses the fast changing capability needs of forestry professionals (Temu et al., 2006).

3. Theoretical framework: towards understanding responsible forest governance

Forest governance broadly refers to steering society towards sustainable forest management by whatever institution or set of institutions (Arts et al., 2012). Specifically, it is the set of processes, mechanisms and institutions (both formal and informal) through which multiple actors articulate their ideas, interests and values, make decisions and influence actions and outcomes related to forests (Lemos and Agrawal, 2006; World bank, 2009). Forest governance as conceptualised in this paper does not refer to a loss of “authority” in forest management from government to non-state actors but rather the different modes of interactions between government and non-state actors.

The quality of forest governance is sometimes described as “good” or “poor” (World bank, 2009). “Good governance” emerged as advocacy for reform of the public sector and/or of corporate management in accordance with a number of criteria (Arts and Visseren-Hamakers, 2012). This concept has been operationalized within the forest sector too, to describe “good” forest governance based on a number of criteria. Some of the key criteria used in literature (Conteras-Hermosilla, 2011; FAO-PROFOR, 2011; Lockwood et al., 2010; World bank, 2009) to assess the quality of governance include: rule of law, inclusiveness, effectiveness and efficiency, control of corruption, transparency and accountability. Reflecting on these criteria, we align with scholars who argue that applying all these criteria to assess governance at once is too overwhelming for developing countries and therefore support the idea of “good enough” governance (Grindle, 2004). But without dwelling too much on these terms, we do recognise that the consequences of poor forest governance are both undeniable and undesirable (World bank, 2009) and that many developing countries seek to improve forest governance (Weiland and Dedeurwaerdere, 2010). In this paper we prefer the term ‘responsible’ forest governance (RFG) to the term ‘good’ forest governance for two reasons. First our notion of RFG avoids associations with organisations such as the World bank and FAO who have actively promoted ‘good’ governance. Second, it signifies our acknowledgement that we are not living in an ideal world and that criteria of good governance cannot simply be followed to the letter. Specifically, we expect trade-offs among these criteria when applied at once. For example more participation means longer time spent on decision making which may mean less time efficiency. Thus our perspective of RFG is not necessarily one with excellent scores on all criteria but one that persistently shows signs of improvement in forest governance criteria considered crucial to a given country. Thus RFG creates room for re-thinking, re-adjusting and re-designing existing practices, based on lessons learnt – thus exhibiting triple loop learning (Medema et al., 2014).

There are challenges which militate against meeting RFG criteria, and these are context specific (FAO and ITTO, 2010). Addressing these challenges in order to meet RFG criteria depends on the availability of required capabilities (Lockwood et al., 2010). Here, capabilities refer to the combination of knowledge, experiences, skills, mind-sets and attitudes that enable individuals to perform responsibly. Specifically, we address capability needs of professionals. We do this because of the pivotal role professionals play in forest management (Innes and Ward, 2010; Temu et al., 2006). Their roles place them in a key position in addressing RFG challenges. Thus moving towards RFG requires understanding challenges and capabilities for addressing them. As far as capabilities are concerned, we limit ourselves to those relevant to forestry education and forestry professionals.

Given the line of argument of the paper so far, we address the following research questions: What are the main challenges to responsible

forest governance in Ghana? Which of these challenges affect RFG most? Do the opinions of forestry officials and non-forestry officials differ on the extent to which these challenges affect RFG? And: What capabilities do professionals need to address RFG challenges?

4. Methods

Mixed quantitative and qualitative methods (Creswell and Clark, 2011; Teddlie and Tashakkori, 2009) were used in the research. Table 1 summarizes the methods used and information obtained with each method.

Data were gathered in two phases. Qualitative data were collected in phase one and quantitative data in phase two. Data in phase one were gathered in three stages. First, a multi-stakeholder workshop was organised to discuss what stakeholders consider as forest governance challenges, without any predetermined framework. There were twenty-one (21) participants (including 7 females) from Ministry of Lands and Natural Resources, Forestry Commission, Forestry Research Institute of Ghana, College of Agriculture and Natural Resources, civil society organisations and forest industry. Second, the workshop was followed by a focus group discussion with twelve (12) forest governance experts (including 4 females) to identify capabilities for RFG based on challenges identified during the workshop. The focus group discussion method was used because it allows deliberations and consensus on specific subjects (Kumar, 2014). A four-column matrix labelled Challenges, Knowledge, Skills and Attitudes and mind-sets guided the discussion. The challenges column was already filled in with the preliminary RFG challenges identified during the workshop. Third, in-depth responsive interviews (Rubin and Rubin, 2011) were used to validate challenges and capability needs identified in stages one and two. This interview technique allows respondents to freely share their experiences and to recount stories from their practice to support their convictions and perceptions. It also allows much probing, cross-questioning based on earlier answers and cross-checking of information from other respondents, without being limited by a rigid interview structure. The interviews were conducted between February–May 2013. Some of the key questions asked include the following: *What are some of the challenges you face in detecting and apprehending offenders in forest-related crime?; How do you ensure that all categories of offenders are sanctioned? Is there a separate apparatus within the judiciary that addresses forestry issues? How does the existence or otherwise of such apparatus affect forest law enforcement? How do you ensure active key stakeholder participation in forest management initiatives?; What are the challenges with ensuring the participation of key stakeholders in forest management processes and decision-making? What capabilities (knowledge, skills, attitudes and mindsets) are needed for addressing these challenges?* During the interviews we also cross-checked information provided by other respondents without disclosing their identity. A total of forty-one (41) interviews were conducted. Respondents were selected using stratified purposive sampling (Patton, 2002; Suri, 2011), particularly for forestry officials. The stratification was based on the management structure of the Forest Services Division, which

distinguishes forest management at range, district, regional and corporate levels. Respondents at the range level have oversight responsibility over a particular forest range. Those at the district level supervise a number of ranges and those at the regional level supervise a number of districts. Respondents at the corporate level supervise or give input to the work of all the regions. Non-forestry officials were selected from research and training, civil society and industry, using strategic sampling based on respondents' involvement in forest governance issues.. The same researcher conducted all interviews. Interviews lasted between 45 min and 2 h. With the exception of an interview with an arrested illegal chainsaw operator, all interviews were recorded with an MP3 Voice Tracer and transcribed. Transcripts were analysed by clustering related challenges and capabilities into dominant themes. Seven (7) dominant themes of challenges and seven capability themes were distinguished. The clustering of themes was validated with two colleagues, to reduce subjectivity (Jonsen and Jehn, 2009).

In phase two, a survey was conducted between April and June 2014 to gather quantitative data. The survey aimed at prioritizing identified challenges and capability needs, to indicate to policy, management and education which of those need to be addressed first and foremost. The survey targeted two broad categories of respondents. Category 1 consisted of forestry officials (FO) with direct oversight responsibility over forests, mainly Forest Services Division (FSD) staff ($n = 84$). These were further divided into two sub-categories: range supervisors and district managers as one sub-category and regional managers and corporate staff as another. Quota sampling was then used for the sub-categories. The larger quota ($n = 56$) was assigned to range and district staff and the smaller quota ($n = 28$) to regional and corporate staff, based on staff numbers. Within the sub-categories, convenience sampling (based on availability) was used to select individual respondents (Bernard, 2011). Category 2 consisted of non-forestry officials [non-FO ($n = 46$)] from research/training, civil society and industry Forestry research and training institutions were selected and within these institutions, respondents with expertise in forest governance were identified. Forest-related civil society organisations were randomly selected from a list obtained from Tropenbos International Ghana whereas forest industries were randomly selected from a list obtained from the Forest Working Group on certification. Officers in charge of forestry operations within these organisations were selected for the survey. One hundred and thirty (130) respondents (including 22 females) participated in the survey, out of 170 persons contacted. Those who could not respond (26%) were mainly industry and NGO field staff, who were out-of-office.

Respondents were asked to rank the seven dominant themes of challenges and capabilities identified in phase 1 of the study in order of importance to RFG in Ghana. As most of the themes were composite variables encompassing a number of items, each theme was operationalized in the questionnaire to show the various items contained under the theme (as given in the first two columns of Tables 2 and 5). Respondents were to rank challenges and capabilities from 1 to 7, with '1' being the most important challenge affecting RFG in Ghana or the most important capability required by professionals to ensure RFG, and '7' being the least important. Rankings were based on respondents' experience with Ghana's forest sector (over 65% had more than 10 years of experience). Questionnaires were administered using face-to-face interviewing. Questionnaires were however left for some respondents who were not at post and picked up later.

During data analysis, mean of the ranks for various challenges and capabilities were presented with their corresponding standard deviation. A Shapiro–Wilk test of normality showed that data were not normally distributed. We therefore tested differences between the responses of forestry officials and non-forestry officials for a given challenge or capability with Mann–Whitney U test. Differences between the responses for any two given set of challenges or capabilities were tested with Wilcoxon signed rank test (Field, 2013). Data were analysed

Table 1
Data collection methods.

Method	No. of participants*	Output
Workshop	21	● Preliminary RFG challenges
Focus group discussion	12	● Preliminary capability needs of forestry professionals
Interviews	41	● Validation of preliminary RFG challenges and capability needs ● Field evidence of challenges and capability needs
Survey	130	● Ranking of RFG challenges and capabilities

* Some participants engaged with more than one method.

Table 2
Summary of challenges to responsible forest governance in Ghana.

Challenge	Issues	Explanation
Political culture	Elite power position of politicians, traditional authority and timber industry Culture of corruption	Elite power position over prosecution of offender, review of stumpage fees, etc. Willingness to pay bribes to: 1. Cover up for offences, 2. Avoid stringent sanctions; Willingness of forestry officials, Police and Judiciary to accept bribes
Legal framework	Inadequate and unrealistic (impractical) laws	Some forest rules have leeway which allows timber industry for instance to accumulate debts; certain rules are impractical to implement
Non-compliance/poor enforcement	Weak structures for detection and sanctioning	Inadequate corruption monitoring, detection and sanctioning structures, example for ineffective revenue collection (timber industry owes huge debts)
Bureaucracy	Prolonged and bureaucratic processes	Procedure for: 1. obtaining services (e.g. permits/timber rights), 2. making and reviewing rules considered long and bureaucratic
Resources	Ignorance and lack of information	About: certain forest rules, rights to information, accountability and participation; right to compensation for farmers off-reserve
	Lack of knowledge and skills	On: effective multi-stakeholder engagement and building trust; prosecution of forest-related crime by some officers of the police and judiciary in spite of trainings given by FC,
	Lack of staff and logistics	Forestry Commission has inadequate field staff and logistics (cars, equipment) for monitoring compliance with rules, lack of funds for organising participatory meetings
Incentive structure	Benefits to local communities Basis for benefit sharing Motivation for forestry officials	No clear directives on the use of royalties consequently local people do not recognise its direct impact Inadequate scientific information to guide decision-making especially off-reserve; Low income, poor remuneration, no additional incentives for taking risks in arresting offenders
Disposition of forestry officials	Lack of authority and autonomy	Inability to take professional decisions (e.g. review stumpage fees) either due to pressure from politicians or willingness to keep favour with the powerful
	Minimal engagement	Narrow range of professionals engaged in law making and review processes adversely affecting implementation of rules
	Lack of commitment	Reluctance in changing existing structures (e.g. instituting deterrent sanctions); Paying only lip service to participation,

in Microsoft Excel and the commonly used Statistical Package for the Social Sciences (SPSS).

5. Results

5.1. Challenges to responsible forest governance

We identified seven categories of challenges, which are the day-to-day difficulties faced in the practice of forest governance. These are challenges related to: 1. Political culture, 2. Non-compliance and poor enforcement, 3. Incentive structure, 4. Legal framework, 5. Bureaucracy, 6. Resources, and 7. Disposition of forestry officials. Table 2 explains these challenges.

Beyond its identification, respondents also prioritized challenges in order of importance to RFG in Ghana. Rankings of forestry officials were distinguished from those of non-forestry officials to determine whether their perspectives on the importance of these challenges differ. Mann–Whitney U test results showed no statistically significant difference between the rankings of forestry officials and non-forestry officials (Table 3). Challenges related to political culture were considered the most important ones to RFG, followed by issues of non-compliance and poor enforcement (Table 3). Wilcoxon signed rank test shows a significant difference in the ranking of these two challenges ($z = 9.01$; $p < 0.001$). The difference in ranking between non-compliance and poor enforcement (ranking 2) on one hand and incentive structure (ranking 3) on the other is also statistically significant.

Table 3
Ranking of challenges to responsible forest governance (1–7 scale of importance).

Challenge	Forest sector (A + B)			Forestry officials (A) n = 84			Non-forestry officials (B) n = 46			Mann–Whitney test	
	Mean	S.D	Rank	Mean	S.D	Rank	Mean	S.D	Rank	U test statistic	p-value
Political culture	1.97	1.58	1	2.00	1.60	1	1.91	1.53	1	1861.5	.70
Non-compliance/poor enforcement	3.98	1.76	2	4.18	1.72	3	3.61	1.78	2	1555.0	.06
Incentive structure	4.13	1.84	3	4.35	1.87	5	3.74	1.72	3	1562.5	.07
Legal framework	4.23	2.10	4	4.05	2.07	2	4.57	2.13	5	1668.5	.19
Bureaucracy	4.39	1.97	5	4.33	2.03	4	4.50	1.89	4	1847.5	.68
Resources	4.58	1.66	6	4.52	1.65	7	4.67	1.69	6	1850.0	.68
Disposition of forestry officials	4.65	1.77	7	4.50	1.81	6	4.91	1.67	7	1686.0	.23

Rank in bold indicate the overall ranking of challenges by the two categories of respondents.

Even though challenges with incentive structure and legal framework were ranked third and fourth by the respondents respectively (Table 3), the difference in ranking is not statistically significant (Table 4). Likewise, the differences in the rankings of the other challenges are not statistically significant either (Table 4), meaning that the level of importance assigned to rankings 3 to 7 is statistically similar.

Below, we elaborate upon the two most relevant challenges ranked first and second (statistically significant) and upon the top-3 of the others (as qualitatively ranked by the respondents; statistically insignificant, however). Because of space limits, we cannot go into all seven challenges in-depth and therefore decided to elaborate those only.

1. Political culture

Two main issues were raised about political culture: 1. Elite power position of politicians, traditional authorities and timber industry and 2. Culture of corruption.

Elite power position

Forestry officials at various management levels, emphasized that politicians, traditional authorities and timber industry interfere with RFG in Ghana. They interfere especially with resource allocation, review of stumpage fees and sanctioning of offenders. They complained:

“The political influence is so much in our system, when illegal operators are caught, you receive calls from the politicians to leave them meanwhile these same politicians are making the laws” (Interview-FO-R3).

Table 4
Wilcoxon signed rank test results for pairs of challenges.

Challenges*	Wilcoxon signed rank test	
	Z test statistic	p-value
Incentive structure – legal framework	0.65	0.54
Legal framework – bureaucracy	1.88	0.06
Bureaucracy – resources	1.76	0.08
Resources – disposition of forestry professionals	0.44	0.66

* Pairs of challenges shown are those with no significant difference in ranking (p value > 0.05).

Civil society respondents also shared these concerns:

“...timber industry is still very powerful that they can get their way around because they think they can do everything with money” (Interview-Non-FO-CS3).

These powerful actors allegedly interfere with forest governance either directly or through top management officials, who in turn instruct their subordinates to take actions contrary to RFG.

Culture of corruption

Elite power position persists because of a culture of corruption. These powerful actors are willing to pay bribes to: shorten long and bureaucratic processes, have decisions made in their favour or avoid punishment for offences committed by people working in their interest. Some industry respondents see this corruption as a necessary part of doing business, though they frame it as a blame on forestry officials:

“There is a challenge with the attitude of the (forestry) officers. For some people, you have to give them money before they will be at your service so if you are unable to provide that you will not get the service” (Interview-Non-FO-Ind. 1).

This culture of corruption among the powerful actors thrives, because forestry officials are perceived as corrupt and willing to accept bribes. Some respondents even believe that forestry officials do not take steps to address corruption or elite power positions because they benefit from it.

“I mean, they stand to benefit...the Commission itself...so once you talk about any major reforms within the sector they begin to oppose it” (Interview-Non-FO-CS 5).

Some forestry officials also mentioned that it is possible for some staff who seem to be too vocal against corrupt practices to be victimized or transferred. Consequently, they fear to expose corrupt practices. This culture of corruption is however not limited to forestry officials. Some in civil society, media and police, are also perceived to be corrupt.

Interviewer: What is your assessment of the role of anti-corruption organisations like the civil society-NGOs, the media and the police?
Respondent: They are not doing anything serious. They are no force to reckon with. They easily compromise (Interview-FO-D3).

With such perceptions about anti-corruption organisations, the culture of corruption thrives with impunity.

2. Non-compliance and poor enforcement

The key issue raised here was that structures for detecting and sanctioning non-compliance are weak. This problem is closely linked with two other challenges: political culture and lack of resources. Most cases of non-compliance go undetected because forestry officials do not have adequate staff and logistics for effective monitoring. Where non-compliance is detected, sanctions are either completely evaded or are not deterrent

enough. This happens because some forestry officials allegedly condone with offenders. For example, an illegal chainsaw operator arrested and brought to a district forestry office intimidated that about 8 out of 10 illegal chainsaw operations go undetected. We confirmed this information from other respondents involved in the timber trade:

“One problem with FC is that they are understaffed; ...again, forest guards and TOs (Technical Officers) connive with the chainsaw people, take money and allow them to go with their lumber. Sometimes forestry officials negotiate with the chainsaw people to allow them to be arrested so that it will show that they are doing their work. The introduction of military men did not bring any improvements since they are all conniving and involved in the corruption” (Interview-Non-FO-Ind. 6).

When arrests are made, the police and judiciary allegedly treat cases as trivial after taking bribes from offenders. Though some respondents indicated that law enforcement agencies lack adequate knowledge on prosecuting forestry cases (Table 2), others also believe they do not appreciate the severity of forest offences. They need to be coerced to treat forest offence cases passionately. A forestry official shared his experience:

“At a district court, I had to see the magistrate, beg him and find some money for him because apparently if nothing was done I would have been in serious trouble. I had to assure him of giving him some of the wood that had been confiscated so that he could jail the people involved for it to be on records and he actually jailed the people.” (Interview-FO-R2).

Having to coerce law enforcement agencies to act further aggravates the problem of non-compliance.

3. Incentive structure

Issues raised about incentive structure were from two perspectives; 1. Incentives for communities to be actively engaged in RFG and 2. Incentives for forestry officials.

Incentives for local communities:

We found that existing benefit sharing schemes for local communities are not serving their purposes effectively. Under existing schemes, traditional authorities and district assemblies are to represent the interest of local people but there are no structures ensuring accountability to them. Consequently, local communities hardly recognise any direct benefits from royalties. This problem is further exacerbated by lack of information and ignorance of locals about their rights (Table 2).

Again, the existing benefit sharing scheme has no clear basis for royalty allocation. It allows Forestry Commission (FC) and the Administrator of Stool Lands to take out management and administrative charges from royalties paid annually, and the remaining amount divided among district assemblies (55%), stool landowners (25%) and traditional authorities (20%). There are complaints of dissatisfaction from various stakeholders about this scheme. Some respondents from civil society complained about FC's share.

“...we don't understand why FC, for every stumpage, will just take a whopping 50% and say this is management fee. Management for what? What basis do they have to charge that amount?” (Interview-Non-FO-CS 4).

Other civil society respondents working closely with traditional authorities intimated that traditional authorities and stool landowners complain about the share of royalties to district assemblies. They propose to have a bigger share because they claim to be closer to the local people and know their needs better than the district

Table 5
Professional capabilities for addressing governance challenges in Ghana.

Capability	Respondent description of capability
Leadership, authority and autonomy	Ability to make and defend professional decisions Ability to enforce existing rules without partiality
Change initiation and management	Ability to propose innovative (but realistic) options for addressing challenges Ability to influence processes Ability to manage changes within the forest sector
Analytical and critical reflection	Ability to analyse and critically reflect on the situation of the forest sector
Trust building and stakeholder relationships	Ability to initiate and continually engage relevant stakeholders in a social learning process (instead of one off consultation meetings) Ability to build trustful relationships with stakeholders
Effective communication and networking	Ability to package and convey accurate information in a form relevant and understandable to specific stakeholders Ability to openly share information and justify decisions Ability to create efficient internal and external networks with related organisations
Resource mobilisation and acquisition	Ability to source relevant human and material resources Ability to optimize human and material resources
New ethics	Professional esteem, “forestry/environmental diplomacy” (Negotiation, lobbying, advocacy skills)

assemblies. This dissatisfaction among different stakeholder groups is becoming a disincentive to RFG.

Incentives for forestry officials: We noted that FC field staff does not have adequate incentives, commensurate with the level of risk associated with their work. First, at the time of the interviews, there was no clear career development outlook. Some respondents intimated that for more than a decade, they had remained at the same career position with the same salary scale. Though interview with Forest Services Division (FSD) human resource management hinted of plans in place to change this situation, respondents considered it discouraging and a disincentive to hard and honest work. Second, field staff at district and range levels complained that their activities, especially monitoring illegal logging operations, are risky and physically tasking. They cited recent cases of field staff murdered during illegal logging monitoring operations and bemoaned that in spite of risks involved, there are no incentives commensurate with their work.

4. Legal framework

Respondents identified three main problems with existing policies, laws and legislation for forest management: i) incomplete laws to cover all relevant aspects of forest management. For example, unlike the case of timber, there are no laws devoted to the development of non-timber forest products. Also, though stakeholder participation is clearly enshrined in the 2012 forest and wildlife policy, there are no directives or guidelines on costs of stakeholder participation. ii) Leeway in existing laws, resulting in poor enforcement. For example the Timber Resources Management Regulations (MLF, 1998) regulation 25 Section 1 allows holders of Timber Utilization Contracts to pay stumpage fees 30 days after billing, instead of an upfront payment. These Timber Utilization Contract (TUC) holders therefore take undue advantage of this provision to delay payment of stumpage fees. iii) Some laws are impractical to implement. For example, the Forest Protection (Amendment) Act (COG, 2002) makes it an offence in Article 1(h) to collect or remove any forest produce without written consent from a competent forest authority. In practice, this is difficult to enforce considering that many locals may need medicinal products for example in an emergency but the forestry official may be living far away from that particular community.

5. Bureaucracy

The research indicated that procedures for obtaining services like timber rights and renewal of permits are unduly bureaucratic. Also, making new laws and policies or reviewing existing ones requires a lengthy process. A respondent conversant with the process explained:

“We wanted to have a legislation for resource allocation off reserve... but the process is stalled at parliament. We have applied to

parliament, there were some concerns raised by civil society, we addressed that and sent the law to them (parliament) but for almost 2 years now, the law has not been passed. Even this is a simple LI which is supposed to take about 21 days before it becomes a law” (Interview-FO-C3).

Sometimes, law making and review processes are stalled for political reasons. A respondent intimated:

“When FC takes the draft to the minister, the question is who reviews it especially when the period for voting is near, who should review the stumpage fees so that he loses?” (Interview-FO-R1).

Consequently, while waiting for changes in the legal framework, forestry officials use their own discretion in governance.

5.2. Professional capabilities for addressing governance challenges

Based on these challenges, we explored capabilities forestry professionals need to navigate towards more responsible forest governance. Responses were clustered into seven key capabilities. These are: 1. Leadership, authority and autonomy, 2. Change initiation and management, 3. Analytical and critical reflection, 4. Effective communication and networking, 5. Trust building and stakeholder relationships, 6. Resource mobilisation and acquisition and 7. New ethics. These capabilities are further described in Table 5.

To determine which ones are most important for professional education and training, survey respondents were asked to rank the capabilities shown in Table 5. Three ranking patterns emerged based upon the Wilcoxon signed rank test. First, capabilities for leadership, authority and autonomy were ranked first (see Table 6) and its ranking is also statistically significant compared to the secondly ranked capability, namely change initiation and management ($z = 3.69$; $p < 0.001$). Second, the differences in ranking between the next five capabilities (ranks 2–6 in Table 6) are not statistically significant (see Table 7), meaning that they are to be considered similar in importance. Third, new ethics was considered least relevant by the respondents, with its ranking significantly different from resource mobilisation and acquisition ($z = 4.62$; $p < 0.001$).

Mann–Witney U test (Table 6) showed no significant difference between rankings of forestry officials and non-forestry officials, except for the case of new ethics ($p = 0.04$). Both categories however believe that new ethics is the least important capability professionals need for RFG, hence, this difference is not considered very relevant by us.

Below, we elaborate upon the most relevant capability ranked first (statistically significant) and upon the top-3 of the others (as qualitatively ranked by the respondents; statistically insignificant, however).

Table 6
Ranking of professional capabilities for responsible forest governance (1–7 scale of importance).

Professional capabilities	Forest sector (A + B) n = 130			Forestry officials (A) n = 84			Non-forestry officials (B) n = 46			Mann–Whitney test	
	Mean	S.D	Rank	Mean	S.D	Rank	Mean	S.D	Rank	U test statistic	p-value
Leadership, authority and autonomy	2.65	1.93	1	2.69	2.02	1	2.57	1.77	1	1930.0	.99
Change initiation and management	3.56	1.84	2	3.45	1.66	2	3.76	2.14	3	1811.0	.55
Analytical and critical reflection	3.85	1.95	3	3.75	1.94	3	4.02	1.98	4	1777.0	.44
Trust building and stakeholder relationships	3.89	1.69	4	4.00	1.78	4	3.70	1.50	2	1761.0	.40
Effective communication and networking	4.21	1.80	5	4.20	1.83	6	4.22	1.78	5	1928.0	.98
Resource mobilisation and acquisition	4.39	1.76	6	4.18	1.72	5	4.78	1.79	6	1545.5	.06
New ethics	5.45	1.92	7	5.73	1.75	7	4.96	2.12	7	1529.5	.04*

Ranks in bold indicate the overall ranking of capabilities by the two categories of respondents.

Again, because of space limits, we cannot go into all seven capabilities in-depth and therefore decided to elaborate those only.

1. Leadership, authority and autonomy

The in-depth interviews highlighted that for RFG, forestry professionals need to have sound “technical” knowledge in forest management. However, they pointed out that sound technical knowledge is not the main problem for forestry professionals in Ghana. The challenge however is that forestry officials seem pressured to take decisions that are not professionally sound. A respondent from civil society laments:

“So why can’t professionals insist on the rules and stick to it? ... Those managing the resource are not working as professionals. They are not interested in the resource and if that continues, we will not have good forest governance” (Interview-Non-FO-CS5).

Thus professionals need the ability to overcome such pressures and to act professionally, without fear or favour. Knowledge areas interview respondents considered relevant to achieving leadership, authority and autonomy include: 1. analysis of forest law, policy and politics, 2. legal knowledge for understanding rule making and review processes, and 3. theories of agency and power articulation. 4. Leadership styles and implications for RFG. Relevant skills identified include: Negotiation skills and diplomacy in dealing with powerful elites, Building and harnessing professional networks for effective forest governance, and decision-making tools and strategies for enhancing autonomy and authority in forestry practice. Attitudes and mind-sets emphasized include professional passion, assertiveness and interest in improving the image of one’s organisation. These were considered lacking among contemporary forestry professionals.

Table 7
Wilcoxon signed rank test results for pairs of capabilities.

Professional capabilities*	Wilcoxon signed rank test	
	Z test statistic	p-value
Change initiation and management – analytical and critical reflection	1.09	0.28
Change initiation and management – trust building and stakeholder relationships	1.46	0.15
Analytical and critical reflection – trust building and stakeholder relationships	0.20	0.84
Analytical and critical reflection – effective communication and networking	1.38	0.17
Trust building and stakeholder relationships – effective communication and networking	1.39	0.17
Effective communication and networking – resource mobilisation and acquisition	0.98	0.33

* Pairs of capabilities shown are those with no significant difference in ranking (p value > 0.05).

2. Change initiation and management

This capability encompasses four main abilities (see Table 5) that would enable professionals to actively bring about change. Results from the in-depth interviews revealed that most professionals in the forest sector are aware of and even displeased with the state of forest governance. They however only lament about them with seeming helplessness. How to bring about the needed change seem to have eluded them. A respondent explained:

“now there are some in the forestry sector who are dissatisfied with the system because of the harm it is causing. These are linking up with other progressive forces to bring change. The inertia is still very strong so in terms of change, one may not see much” (Interview-Non-FC-CS 7).

Change initiation and management is meant to equip professionals to bring up innovative ideas for change and also inspire change.

We identified five key knowledge areas to be explored here: 1. Analysis of contemporary innovations in forest governance 2. Implications of various theories of change, agency and power 3. Dynamics of influencing change processes and 4. Human resource management. Skills to be developed include: Team building, influencing high-ranking actors through negotiation, lobbying and advocacy skills. These skills may be developed along with attitude/mind-sets of pro-activeness, willingness to try new things, open-mindedness to criticism, and tenacity. With such capabilities, respondents believed professionals are more likely to be inspired to explore innovative ways of for example motivating field staff to reduce tendency for corruption.

3. Analytical and critical reflection

The core ability this capability seeks to address is being able to analyse and critically reflect on how things are done within the forest sector. This includes being able to understand forest rules and rule-making processes, being able to analyse economic costs and benefits in relation to benefit sharing schemes and also being able to assess the effectiveness and efficiency of processes. This capability was considered relevant to responsible forest governance because interview respondents highlighted how forestry officials sometimes embrace certain innovations based on donor prescriptions or instructions from superiors without being convinced of its relevance. An example was given as the introduction of customer service offices at pilot forest districts. This innovation failed at the pilot stage because forestry officials felt though well intended, the concept was ill-introduced. They could however not adequately debate and negotiate for its amendments or joint redesign to suit the Ghanaian context.

We found that to develop this capability the following knowledge background are necessary: 1. Analysis of forest law, policy and politics, 2. political economy, and 3. forest economics and valuation. Skills identified include: 1. Critical thinking that allows professionals to critique the status quo and also “think outside the

box and without the box”, and 2. Systems thinking that shows connectivity between different forest related systems. The important attitude/mind-set here is objectivity.

4. Trust building and stakeholder relationships

This capability comprises being able to organise and steer long-term multi-stakeholder interactions and also ensure open engagement based on trust. Respondents considered this capability necessary because of the mistrust among the different stakeholders. Civil society expressed doubts about the commitment of forestry officials to sustainable management of forests, alleging that officials work for their personal interest. Forestry officials on the other hand doubted the intentions of civil society in seeking to participate in forest management decision-making. This mistrust may probably be a result of ineffective communication but has affected the ability of the forest sector to harness its strengths for addressing challenges with the political culture, poor enforcement and lack of resources.

Forestry officials, especially those not actively involved in piloting community engagement programmes, also mentioned that stakeholder engagement is challenging:

“Sometimes it is not easy engaging them (stakeholders) because you receive a lot of resistance because that (the forest) is their source of livelihood...sometimes people (in local communities) even come (to meetings) drunk and cause lots of problems. Other people come with their own issues they have with FC, other than what is on the agenda and would like to discuss it at the meeting” (Interview-FO-R 1).

The key knowledge element identified for trust building and effective stakeholder engagement were 1. Principles of trust building, 2. Power dynamics in multi-actor processes and 3. Principles and dynamics of stakeholder engagement. Skills in stakeholder analysis, facilitation, team building and consensus building were considered key. Respect for the rights and interests of others, empathy and willingness to be accountable were seen as important attitudinal disposition for building trust.

6. Discussion

This study shows that issues related to political culture are a major challenge to responsible forest governance. This is not unexpected. Many researchers confirm the persistent power position of various elites in forest management (Baird, 2010; Bond et al., 2009; Hansen and Lund, 2011; Kotey et al., 1998; Trevin and Nasi, 2009). While some view the role of these powerful actors as a form of corruption, others see it as patron-client relations (Baird, 2010). Whichever way this elite power position is viewed, it weakens enforcement and perpetuates non-compliance. Hansen (2011) notes that in Ghana certain laws are not appropriately enforced when the consequences of enforcement are considered politically costly. This dominance of elite power also

reduces forest revenue and exacerbates other existing challenges like lack of resources, inadequate benefits to resource owners and lack of incentives for forestry officials. Subsequently, the ability of forestry officials to deal with elite power is further weakened. Opoku (2006) observes that poorly resourced forestry officials may find it difficult to assert authority on wealthy and politically influential industry clients. Elite power position in forest management therefore creates a cycle that eventually ridicules professionalism in forestry. The study shows that the disposition of forestry officials (including their lack of authority and autonomy) is not considered a major challenge to RFG. We however argue that once the negative role of elite power persists and forestry officials seem helpless in curbing this, it points to lack of authority and autonomy.

The endemic nature of the culture of corruption described in this research concurs with the work of several researchers (Baird, 2010; Sola, 2011; Teye, 2013; Trevin and Nasi, 2009). Forestry officials did not however highlight most of our findings on corruption. It confirms the observations by FAO and ITTO (2010) that of nine West African countries studied, Ghana was one of two countries that did not report corruption as a problem in forestry. Incentives are a determinate factor of whether forestry officials will engage in illegal and corrupt activities or not. Forestry officials are enticed into increasing their salaries by illegal means (FAO and ITTO, 2010; Kubo, 2010; Sola, 2011). Attractive compensation packages and good prospects for promotion and professional development can serve as a good incentive and even improve performance (FAO-PROFOR, 2011). Also, FAO (2005) lauds the role of independent bodies and third party monitoring in addressing corruption in some African countries. However, our work suggests that in Ghana, there is a perception (at least among some forestry officials) that civil society is not a strong force to reckon with in dealing with the problem of corruption. Though not adequately substantiated, this perception may weaken the effectiveness of the role of civil society as watchdogs in the forest sector.

Several research papers and reports (FAO and ITTO, 2010; Hansen, 2011; Ramcilovic-Suominen and Hansen, 2012; Sola, 2011) point out that non-compliance/poor law enforcement in forestry is linked to other governance challenges. An earlier World bank (2006) report showed that non-compliance exists because of broader governance failures and that strengthening law enforcement alone will not work unless the laws and the processes or institutions influencing forest use, are also improved. Insufficient enforcement capacity, deficiencies in coordination between forest-law-enforcement and judicial bodies and absence of alternative economic opportunities for local people, also contribute to poor enforcement and non-compliance (FAO and ITTO, 2010; Sola, 2011).

Thus adequate resources are key to addressing most of the challenges identified. ‘Lack of resources’ was however not considered a major challenge. This finding resonates with reports that Ghana neither acknowledged a lack of resources or lack of information as a challenge to forest governance (FAO and ITTO, 2010). In this study, its relatively low ranking could also be explained by the survey instrument’s aggregation

Table 8
Implications of research findings for professional forestry education and training.

Implications	Clarification
Technical knowledge in forestry remains essential	Forestry education should continue to provide state-of-the-art technical knowledge in forestry (Kammesheidt et al., 2007). However, professionals need to acquire additional capabilities to address the demands of a rapidly changing forestry practice.
Additional space for non-technical knowledge is needed	Forestry curricula, especially at the graduate level and in tailor-made programmes for mid-career professionals need to create space for non-technical capabilities like leadership, authority and autonomy. Capabilities provided should however follow country-specific needs (Arevalo et al., 2012)
Simultaneous development of knowledge, skills, attitudes and mind-sets is crucial	An integrated approach (Alao, 2010; Kammesheidt et al., 2007) which simultaneously develops not only the knowledge but also skills, attitudes and mind-sets dimensions of specific capabilities is crucial. This is preferred to a “bolt-on” (Sterling, 2004) of isolated “soft skills” or “interpersonal skills” to existing technical courses.
Space for more outside classroom experiences is required	Regular classroom lectures cannot adequately inspire most of the capabilities identified in this research. Developing these capabilities require field experience sharing among small groups (Miagostovich, 2004), case studies of forest governance issues in related countries and scenario analysis (Mayers et al., 2013).

of all categories of resources (knowledge, skills, information, staff and logistics). Probably if lack of staff and logistics had been separately ranked, it would have been given higher priority. This is because forestry officials believed they had been educating and providing information to stakeholders. Addressing challenges with resources is likely to have positive repercussions on a number of other challenges like non-compliance and poor enforcement (FAO, 2005), political culture and incentive structure (Opoku, 2006).

This study shows that to move towards more responsible forest governance, forestry professionals need diverse range of capabilities that go beyond the well-known technical forestry fields. This concurs with research on forestry education calling for changes in forestry education curricula towards incorporation of meta-disciplinary skills and attitudes (Alao, 2010; Arevalo et al., 2010; Kammesheidt et al., 2007; Temu et al., 2006). The main difference is that previous research (Arevalo et al., 2010; Arevalo et al., 2014; Vanclay, 2007) has focused on individual generic skills like negotiation, critical thinking and business skills and not aggregated them into composite capabilities. Table 8 summarizes the key recommendations for professional education and training that can be derived from our study. With these recommendations, universities and other training centres for forestry professionals seem to have an important task ahead in creating curricula with learning experiences that can address the key capability needs of professionals.

It is not surprising that capabilities for leadership, authority and autonomy are considered most crucial to RFG in Ghana. This is because a number of the problems researchers have identified with forest governance in Africa (Carlsen and Hansen, 2013; Sola, 2011) can be linked to lack of professional authority and autonomy. We however did not interview politicians and traditional authorities to ascertain their views on forestry professionals developing these capabilities. Though these capabilities are discussed in professions like education and nursing (Simkins, 2005) they are hardly raised in forestry until recently when leadership skills has been emphasized (Arevalo et al., 2014; Vanclay, 2007). The need for capabilities for initiating and managing change highlighted in this study could also possibly be seen as enshrined in these researchers' general call for incorporation of leadership skills. It is however important to emphasize the dimensions of general leadership relevant to today's forestry professionals. It is also not surprising that capabilities for analytical and critical reflection are rated high. This is because the need for reflexivity and critical thinking has been much emphasized across many professional endeavours including forestry (Arevalo et al., 2010; Arevalo et al., 2014). These capabilities are also the basis for developing other capabilities identified in this research. Unlike the general emphasis on communication skills in most research, effective communication indicated in this research was not about presentation skills and report writing. Though these are also important, the focus was on being able to effectively address the information needs of specific stakeholders to enhance participation, transparency and accountability. The level of importance attached to effective communication and networking agrees with the notion expressed among respondents that ignorance and lack of information is not a major problem in the forest sector. However, the work of CIKOD and GlobalWitness (2013) suggests that there is still much to be done in educating locals to empower them to contribute meaningfully to responsible governance.

Though statistically comparable to others, capabilities for resource mobilisation and acquisition were relatively assigned minimal importance, commensurate with the relatively low importance assigned to lack of resources as a challenge. This may possibly stem from the mentality of forest sector reliance on central government or donors for resources (Mustalahti and Lund, 2009). Again, the development of new ethics was also given minimal importance. This could be a reflection of the traditional notion that ethics is beyond education or training. Temu and Kiwia (2008) have however suggested the need for ethics in forestry education. Certain challenges, like the endemic culture of corruption, can probably not be addressed effectively without new

ethics. New ethics could therefore be interwoven into various courses and training programmes.

7. Conclusion

This paper addressed the quest to move towards more responsible forest governance and its implications on the capabilities of forestry professionals. It identified and prioritized emerging challenges to RFG in Ghana as a basis for exploring capability needs of forestry professionals. Forestry sector actors concur on the most important challenge to RFG as bordering on issues of political culture, especially the power position of some elites in forest governance. Though some doubt the willingness of forestry professionals to address these elite power positions, there was consensus that the capabilities forestry professionals need most are those that make them better able to defend and follow through their decisions with authority and autonomy.

To equip professionals to better respond to changing discourses towards RFG, their training should enable them to be analytical and critically reflexive in their thinking, strengthen their ability to defend professional decisions and develop their capacity to bring about change and transformation when and where necessary. Consequently, apart from providing state-of-the-art technical knowledge in forestry, professional education and training should create space for developing non-technical capabilities or so-called 'soft skills' (Kibwika, 2006). To develop these capabilities, graduate programmes or refresher courses for mid-career professionals may need to take an integrated approach. This means simultaneously developing knowledge, skills, attitudes and mind-sets which link up with performance of professionals in practice, rather than the current bolt-on of few "soft-skills" components in curricula.

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