Fighting over forest: interactive governance of conflicts over forest and tree resources in Ghana’s high forest zone
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Synthesis, recommendations and conclusions

Introduction

By the turn of the millennium, forest governance had been given recognition on Ghana’s development agenda by state and non-state actors with influence from the international community. Examples are the Ghana Natural Resource and Environment Governance (NREG) Review, the Forest Law Enforcement, Governance and Trade (FLEGT) Voluntary Partnership Agreement (VPA) with the European Union to combat illegal logging and strengthen forest governance, and Reducing Emissions from Deforestation and Degradation plus (REDD+) (see Chapter 5). The emergence of these governance initiatives increased the diversity of actors in decision-making, resource use and management. This resulted in a growing competition for resources and conflicting objectives between and among actors in the system-to-be-governed and the governing systems, with emerging conflicts being the result. However, conflict management – although a key building block of forest governance – has received little or no consideration in forest management, policy and most on-going governance initiatives. A study on this topic in Ghana’s high forest zone that was intended to generate an understanding and find a means of dealing with forest and tree livelihood conflicts therefore became an important research area under the ‘Governance for sustainable forest-related livelihoods’ programme, which was carried out as a joint effort by Tropenbos International (TBI) Ghana, the Amsterdam Institute for Social Science Research (AISSR) at the University of Amsterdam and Kwame Nkrumah University of Science and Technology (KNUST) from 2008-2012.

The high forest zone, which contains most of Ghana’s forest resources, has been categorised into on and off-reserve forest areas. It is the area where conflicts and illegalities occur with regard to the utilisation and management of forest and tree resources. The study therefore set out to explore and analyse governance arrangements, conflicts and conflict management in Ghana’s high forest zone using the Tano-Offin forest reserve in Nkawie Forest District as a case. An important reason for selecting the Tano-Offin forest reserve as the study area was that it contains all governance regimes that
occur in Ghana’s forests, i.e. protection, production and plantation areas, while an off-reserve area with relevant forest resources was located nearby.

Situated in four theoretical strands related to political ecology, forest-based livelihoods, interactive governance and conflict and conflict management (see Chapter 2), this study provided answers to six main research questions in eight empirical studies (Box 12.1).

Theoretically, the analysis in this thesis is grounded in interactive governance theory (Kooiman et al. 2005), combined with the multi-dimensional conflict wheel developed by Mason & Rychard (2005). This implied, first, that a distinction was made between the system-to-be-governed (Ghana’s high forest zone, consisting of a natural and socioeconomic sub-system and the interactions between them), a governing system and the governance interactions between them. Both were analysed in terms of complexity, diversity, dynamics and scale. Second, it meant the centrality of the concept of interactions in understanding both governance (defined by Kooiman et al. (2005:17) as ‘the whole of public as well as private interactions that are initiated to solve societal problems and create societal opportunities’) and the governability of a system. The latter is defined as ‘the overall capacity for governance of any societal entity or system’ (Kooiman 2008: 173, see Chapter 2). Third, the interactive governance perspective permitted the deconstruction of the governing system in terms of (i) governance orders (first order or day-to-day management, second order or institutions, and third order or meta-governance that encompasses the normative principles and values that guide first and second order processes); (ii) governance modes (hierarchical governance, co-governance and self-governance); and (iii) governance elements (images, instruments and actions). Fourth, the use of Mason and Rychar’d’s conflict wheel implied an analysis of conflicts over forest and tree resources along various dimensions, including context, issues, actors, causes, dynamics and conflict management strategies. Finally, the study sought to find means of constructively managing forest and tree livelihood conflicts inherent in

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the forest and tree systems in order to improve the governance process. This corresponds with the last dimension in the conflict wheel and was analysed in terms of the elements (images, instruments and actions) distinguished in interactive governance theory (Kooiman et al. 2005).

The study employed mixed methods (i.e. an integrated combination of quantitative and qualitative methods) with different research techniques in the data collection process, including document analysis, community meetings, surveys, a self-completion questionnaire, interviews, validation meetings and workshops. The main rationale for the use of mixed methods research in this study was to obtain a complete and comprehensive picture of forest resource conflicts and conflict management strategies from different actor perspectives and to enable the triangulation of quantitative and qualitative data (see Chapter 3).

The next section synthesises the empirical findings from the study with respect to the main research questions. Then the theoretical implications of this study are outlined, with a focus on theories of political ecology, forest-based livelihoods, interactive governance, conflict and conflict management, complemented with those on co-management and social capital. The last part of this chapter presents suggestions for further research, recommendations for policy and practice, and the final conclusions.

Synthesis of the empirical findings

This section brings together the most important results from the empirical chapters by responding to the main research questions.

*What are the natural and socioeconomic characteristics of Ghana’s high forest zone and how do they interact?*

This question was addressed in Chapter 4, which focused on the system-to-be governed: Ghana’s high forest zone. Here (as in subsequent subsections) the main findings are presented, organised according to the sub-questions that were specified in Table 1.1 and complemented with the main challenges identified.

1. *What is the nature of Ghana’s high forest zone in terms of diversity, complexity, dynamics and scale?*

   The high forest zone is a key contributor to the nation’s GDP, as a source of raw material for the timber industry and a source of livelihoods for both rural and urban people. It is a nested continuum of subsystems existing across five regions in Ghana at different levels of geo-political scale. The high forest zone is diverse as it holds a mixture of ecological vegetation types ranging from evergreen rainforest to dry semi-deciduous forest characterised by a wide range of flora and fauna species. The inter-dependency and interaction within and among the different parts of the system brings to fore the system’s complexity. This complexity also prevails in the human system in which different forest users (mainly farmers, timber operators, chainsaw millers and non-timber forest product collectors) compete for timber and non-timber forest resources and farming land. Furthermore, complexity is related to the different management regimes which each have their own specific governing system and institutions that regulate access to forest and tree resources. In terms of dynamics, changes in policies governing forest resource management and use over the years and conflicting interactions with other land-use systems have increased the high forest zone’s
vulnerability to excessive exploitation. These dynamics in natural resource systems are confirmed in many previous studies, both in Ghana (e.g. Kotey et al. 1998, Teye 2005, Appiah et al. 2009) and elsewhere (Kooiman et al. 2005, ITTO 2006).

2. Which forest users prevail and how do they interact with the natural system?
The actors who access forest resources were found to be diverse in terms of composition, interests and levels of geographical scale. They were divided into actors at community level (farmers, gatherers of non-timber forest products, hunters) and market actors (timber operators, illegal loggers and chainsaw millers, plantation developers and non-timber forest product traders). Both categories are far from homogenous: the diversity of actors and their interests in accessing resources is linked to differential powers and needs. This poses a challenge to the governability of the system due to conflict incidences as reported in this study and previous ones carried out in the high forest zone (see for instance Ohene-Gyan 2004, Marfo 2006).

3. Challenges
Based on these findings, the main challenges identified relate to the questions of whether (i) the high forest zone (and its embedded sub-systems) has the resilience to withstand the excessive pressure of over-exploitation of its resources and associated degradation, and (ii) the socio-economic system will enable the actors to derive social and livelihood benefits from the forest resources on a sustainable basis with less conflict or constructive means to manage them. Chapters 7-11 provide input to answer such questions.

What are the features, orders, modes and elements of the governing system that contribute to the governability of Ghana’s forest sector and how does it deal with forest and tree-related conflicts?
This question has been dealt with in Chapter 5 which analysed the governing system of Ghana’s forest sector from a historical perspective and in terms of its current characteristics. The latter was done employing the notions of interactive governance theory as expressed in the sub-questions below.

1. What is the historical context of the Ghanaian forest governing system in terms of its policies, legislations and conflicts?
Results in Chapter 5 show that prior to the introduction of scientific forestry, access rights to forest resources were at the discretion of the local community and town chiefs. The introduction of scientific forestry in the early 1900s and the associated ‘timberisation’ of forest governance and conflicts during the reservation process, left behind legacies of unresolved tenure and access rights issues. In addition, it revealed that rights to forest resources were taken away from local communities and town chiefs (see Francois 1987, Amanor 2005, Agyeman et al. 2010). These processes provided an arena for multifaceted conflicts related to restricted access to timber, NTFPs and farming land.

2. What features prevail in the forest governance process (in terms of diversity, scale, complexity and dynamics)?
The emergence of the collaborative and governance policies has broadened actor participation in forest use, management, decision making and benefit sharing and has
also increased the diversity and complexity of the governing system. This has been influenced by principles and governance processes in both the national and international arenas (e.g. the Forest Principles adopted at the United Nations Conference on the Environment and Development (UNCED) in 1992, the good governance debate in World Bank circles and, more recently, the Voluntary Partnership Agreement and Reducing Emissions from Deforestation and Degradation plus (REDD+) processes). This study revealed actors in the forest sector to be operating in six governing structures. These include (i) the statutory governing structure, (ii) the civil society governing structure, (iii) the customary governing structure, (iv) the market governing structure, (v) a hybrid governing structure, and (vi) an international governing structure. This differs from most authors who distinguish between the state, the market and civil society (e.g. Kooiman & Bavinck 2005, Owusu 2009). The hybrid governing structure was introduced in this study as a number of actors do not fit neatly into one specific category due to the transitional nature of the Ghanaian governance process, as a result of which actors continuously change from one governing mode to another and operate at different levels of scale while being positioned at one geo-political level. This implies that the concept of hybrid governing structure as understood in this study is related to, but more dynamic than, the notion of neo-African governance proposed by Siloma & Zaal (2005) which refers to hybrid governance forms in which formal governing bodies, traditional leadership structures and non-governmental and community-based organisations amalgamate.

3. What is the quality of the three governance orders (principles, institutional arrangements and day-to-day management of conflicts) in the forest governing system?

This study has shown that much has been done in Ghana in terms of introducing collaborative governance initiatives. Nevertheless, the current legislations are still not favourable in terms of people’s access to resources due to criminalisation associated with access to these forest resources. The denial of some actors’ access rights to resources, coupled with implementation challenges and dynamics in population growth, have resulted in illegalities characterised by conflicts. Unfortunately, the ad hoc conflict management strategies applied over the years have not been able to manage these conflicts constructively. It was in view of these that the forest governors and experts who took part in this study expressed the need for conflict management to become an integral component of the forest governance process in Ghana.

4. What is the responsiveness of the governance modes (hierarchical, co-governance and self-governance)?

Hierarchical governance, co-governance and self-governance co-exist in Ghana, and this supports the identification by Kooiman et al. (2005) of such modes of governance in the fisheries governing system. However, within the formal forestry sector a blend of hierarchical governance and co-governance commonly prevails, with the hierarchical mode of governance tending to prevail over co-governance. The forest governors and experts who took part in this study identified this as one of the weaknesses in Ghana’s forest governance process. Self-governance was found to prevail prior to the introduction of scientific forestry when traditional authorities were in charge of forest management. It still occurs at local level, where the traditional council manages civil conflicts and convicts offenders without government influence or mediation by government officials (Chapter 7). Regarding the responsiveness of
these modes to the needs of the stakeholders, this study showed that most governance initiatives introduced in the forest sector have promoted co-governance and have therefore broadened actors’ participation in decision making, management and benefit sharing. However, a lot of them are project driven and financially time-bound. Hence, the sustainability of the new governance initiatives becomes a challenge unless the sector undergoes reforms that will eliminate most of its hierarchical notions enshrined in legislations and embrace co-governance as an integral component of forest management. From a self-governance perspective, scientific forestry has given little recognition to the devolution of forest resources and management authority to local communities, since forest resources are vested in statutory government.

5. How do governance elements (in terms of forest actors’ images, instruments and actions) fit in with conflict management and how do actors assess the potential to strengthen forest conflict management in the governance process?

Despite intentions to move towards co-governance and sustainable forest management, the forest governors and experts involved in this study identified challenges with regard to dealing with forest conflicts and their driving forces in day-to-day natural resource management (see point 6 below). This indicates a misfit between actors’ ‘images’ of the problem (i.e. conflicts over forest and tree resources), the instruments they have to solve the problem (i.e. conflict management strategies) and the actions that are needed (i.e. integrated conflict management). The forest governors and experts identified various actions which have the potential to strengthen forest conflict management in the governance process. In order to improve the way in which they deal with the various stakeholders, they suggested several soft instruments that could complement the existing legislation, such as the capacity development of forest managers and the creation of a platform for stakeholders to engage in dialogue and express their grievances. They hope that this will create new opportunities which help to accommodate the multiplicity of actors and promote effective interactive forest governance. In order to ensure that constructive conflict management becomes an integral component of the forest governance process, workshop participants proposed strategies to be embedded in the governing system with a view to strengthening both second and third order governance (i.e. institutions and their underlying principles respectively). As regards the strengthening of institutional arrangements and instruments, their main recommendation was to institutionalise constructive conflict management strategies in the forestry sector. They called for a unit within the Forestry Commission which would be specifically designed to manage conflicts and enforce laws, and to arbitrate, become involved in adjudication, mediate, educate and constantly engage in a dialogue with its stakeholders, clients and other sectors. They judged a periodic assessment of the performance of such a unit to be essential in order to identify weaknesses and apply the necessary remedy on time. This should be based on underlying principles that they considered essential and many of which emanate from the good (forest) governance debate (transparency, accountability and public participation; stability of forest institutions and conflict management; quality of forest administration; coherence of forest legislation and rule of law; and economic efficiency, equity and incentives) (c.f. World Bank 2009).
6. Challenges

A key challenge inherent in Ghana’s governing system is the pervasiveness of conflicts over forest and tree resources, with inadequate conflict management mechanisms being in place. This is caused by the weak institutional structures in terms of staffing and logistical equipment of the Forest Services Division of the Forestry Commission and weak collaboration between the Forestry Commission, the judiciary and the police, leading to weaknesses in law enforcement. Another challenge is the supremacy of the top-down governance style which exists in the formal sector and which overshadows the co-governance style inherent in the decentralised structures in the various districts and the participatory initiatives based in the 1994 Forest and Wildlife Policy. An equally important challenge is the allocation of resource ownership and management to separate actors (i.e. traditional authorities and statutory governments respectively). This makes it difficult to reconcile statutory and customary systems to manage conflicts constructively. Other challenges identified in Chapter 5 include an inadequate political and administrative will to address natural resource management problems because of the influence of politicians and powerful loggers, a diffusion of decision-making power in certain co-management cases, and forest laws not being sufficiently differentiated for forest reserves and off-reserve areas, despite the different contexts and actors.

What are the perspectives of forest governors and experts in the forest sector regarding the nature of forest and tree-related livelihood conflicts and conflict management options in Ghana’s high forest zone?

This question guided the analysis in Chapter 6, for which the data was derived from a four-step methodology that included desk-study, semi-structured interviews with key respondents, self-completion questionnaires and a workshop with forest governors and experts.

1. What are respondents’ ‘images’ regarding forest and tree-based livelihood options and associated conflicts?

The forest governors and experts identified various forest and tree-based livelihood options in Ghana’s high forest zone (on and off-reserve) that provide both direct and indirect services and products to numerous actors in Ghana. Examples include the modified taungya system commercial plantations, HIPC (highly indebted poor countries)-funded plantations, admitted and illegal farming, chainsaw milling, and non-timber forest product extraction for both domestic and commercial purposes. The range of forest and tree-based livelihoods found in Ghana’s high forest zone and acknowledged by the respondents corresponds to assertions in livelihood literature that hundreds of millions of people depend to varying degrees on forests for their livelihoods (World Bank 2001, Sunderlin et al. 2005). These livelihood components are associated with conflicts involving actors spread across the five governing structures at national level and triggered by causes such as poor law enforcement and farming land scarcity. These causes fit well into five categories of causes identified in conflict literature: policy and legislative lapses and institutional failures (Tyler 1999), perceived goal incompatibility and perceived opportunities for deliberate interference with the other’s goals resulting in blocking behaviour (Schmidt & Kochan 1972), and environmental scarcity, including structural scarcity related to the unequal distribution of natural resources (Homer Dixon 1994). These categories cover most of the
conflict causes mentioned by the respondents, but are not mutually exclusive (Chapter 6, Box 6.1).

2. **What are respondents’ perceptions regarding the instruments available to manage these conflicts?**

This study indicates that dealing with forest conflicts occurs on a case-by-case basis. It ranges from avoidance to violence, in accordance with the continuum of conflict management approaches developed by Moore (2003).

3. **What actions do forest governors and experts propose to improve conflict management?**

The forest governors and experts highlighted the need for policy consideration of two action plans that they proposed. The first refers to scale-specific but inter-linked recommendations for a stepwise conflict management model, which integrates statutory and customary institutions. This model revolves around three key sources of forest and tree conflicts that are very prevalent in the sector, i.e. conflicts relating to (i) compensation and land use (e.g. illegal farming in forest reserves and crop damage compensation payments), (ii) forest boundary conflicts, and (iii) illegal chainsaw operations and logging. Each of these conflict types is associated with specific conflict management strategies. In the proposed model, the Forestry Commission is the mediating actor (provided it maintains close linkages with traditional authorities) that indicates the steps required to achieve each solution. The second action plan encompasses a proposal to assess the feasibility of re-introduction of a prosecution system within the forestry sector (Chapter 6).

4. **Challenges**

Challenges with regard to conflict management identified in Chapter 6 include, first, the prevalence of coercion in the administrative system, which has resulted in hostility between officials of the Forest Services Division and actors engaging in forest offences, apathy among the stakeholders as regards providing support for forest management, and fighting and injuries. Second, the District Forest Manager or his/her representative are often absent as witnesses and mediators during social responsibility (SRA) agreement negotiations between communities and timber operators. This often results in disagreement between the parties which may lead to disputes that may escalate if not resolved on time. A third challenge involves interference by politicians and elites during conflict resolution processes who sometimes plead on behalf of the offenders, thereby preventing the necessary punishments being meted out. Finally, respondents noted the overall problem that it is often difficult to arrange trade-offs that are acceptable to all conflict parties involved, and that an efficient mechanism capable of minimising conflict incidences would be an important means for achieving sustainable resource management.

What governance arrangements and conflicts occur and what conflict management strategies are employed in the protected Globally Significant Biodiversity Area in (GSBA) in Tano-Offin reserve and what are their implications for on-going trends in forest governance such as the Voluntary Partnership Agreement and REDD+?
This question was addressed in Chapter 7, which studied prevailing conflicts in a protected governance regime, the Globally Significant Biodiversity Area (GSBA) in the Tano-Offin forest reserve, where the inhabitants of the ‘admitted village’ Kyekyewere find themselves excluded from forest resources in the middle of a forest reserve.

1. **What are the characteristics of the Tano-Offin GSBA as a system-to-be-governed in terms of the natural and socio-economic sub-systems and the interactions between the two?**

The natural system analysed in Chapter 8 is the Tano-Offin Reserve GSBA, created for its rich biodiversity and water bodies (Kyereh et al. 2006). The admitted village of Kyekyewere and its inhabitants whose livelihoods are linked to forest resources represent the socio-economic sub-system. The location of the village in the middle of the forest reserve makes its inhabitants highly dependent on forest resources and farming activities, resulting in growing pressure on forest and land resources due to the growth of the village’s population since the creation of the forest reserve and the GSBA. The inhabitants of the admitted village of Kyekyewere have few legal forest livelihood options other than accessing non-timber forest products for domestic use. Most forms of forest-based livelihood components – non-timber forest product extraction for commercial use without a permit, chainsaw milling, extension of admitted farms and farming in the reserve – are illegal according to prevailing laws such as Act 624, Act 547 and LI1649. In 1998 Ghana banned the use of chainsaws to process lumber. Farming within forest reserves is illegal, except in the case of admitted farms and farming under reforestation schemes such as the modified taungya system (see Chapter 8).

2. **What governing systems operate within the Tano-Offin GSBA?**

Analysis of the governing system in the Tano-Offin protected GSBA regime from an interactive governance perspective revealed a tension between rules and laws that restrict inhabitants’ access to forest resources and their dependence on the same (Chapter 5). The above noted illegality of most forest-based livelihood activities supports the assertion of Peluso (1992 cited in Amanor 2005) about the ‘progressive criminalisation of customary rights of forest access’. In the statutory governing system a command and control approach prevails, termed a top-down ‘fence and fine’ approach by Adams & Hulme (2001) or an ‘ecototalitarian’ approach by Dietz (1996). This study furthermore revealed that traditional authorities (i.e. the customary governing structure) play a more important role in conflict management than is often assumed. Literature suggests that they no longer have a say in forest resource allocation and management as forest resources fall under the custody of the central state (Mayers & Kotey 1996, Ghana Constitution of 1992). However, the findings revealed that traditional authorities at local level still play an important role in the management and resolution of conflicts relating to these resources. The same observations were also made in Chapters 8 and 9 of this thesis.

3. **What are the perceptions of the inhabitants of Kyekyewere regarding the nature of forest and tree-related livelihood conflicts in Tano-Offin GSBA?**

The two conflict types observed in this study were those related to forest resources (timber and non-timber forest products, including game) and those related to forest land use (illegal farming and extension of admitted farms). This reaffirms previous
studies that portray conflicts as being inherent in natural resource use due to the complexity, diversity and dynamics of their natural and socioeconomic environments, in which actors operate at different levels of scale (Castro & Nielsen 2003, Buckles & Rusnak 1999, Kooiman 2008, Chuenpagdee & Jentoft 2009). Second, these conflicts were found to occur among resource users and between resource users and Forestry Commission officials. The multi-level presentation of the actors involved in the conflicts brings to the fore the spatial distinctions between actors involved in conflict situations (Bryant 1992, Dietz 1996). These conflicts portray both manifest behaviour (such as entering the forest reserve without a permit or stealing crops or logs from others) and underlying causes (termed ‘antecedent conditions’ by Pondy 1967) such as land scarcity and poverty. In terms of dynamics, conflicts involving only actors at community level are perceived as being the least violent, with more violence occurring when conflicts escalate to district level or beyond. Third, the combination of conflict management strategies mentioned by the respondents corresponds with coping strategies identified in conflict literature (e.g. Glasl 1999, Moore 2003, Engel & Korf 2005, Wehrmann 2008).

4. What do the findings mean for ongoing trends in forest governance such as the Voluntary Partnership Agreement (VPA) and Reduced Emissions from Deforestation and forest Degradation plus (REDD+) processes?

Strengthening law enforcement under the VPA or more stringent control of protected areas due to REDD commitments is likely to restrict villagers’ access to forest resources even more. Building social safeguards implies rethinking the governance conditions of protected areas, especially the status of admitted villages and farms where people have restricted access to forest resources and few options to build a livelihood. Where re-settlement of the inhabitants is not the first option, REDD+ payments and joint reforestation schemes with multiple benefits such as the modified taungya system and other innovative co-management systems that will bring direct benefits to communities may provide important social safeguards. Furthermore, it is key to enhance the conflict management capacity of Forest Services Division officials and the judiciary, with due attention being paid to the role of traditional authorities.

5. Challenges

The illegality related to forest resource and land use in a protected regime results in conflicts that prejudice local people’s wellbeing. Unfortunately, most of the perceived illicit activities (including illegal farming, non-timber forest product exploitation and chainsaw logging) are the main sources of livelihoods of people living in such a protected area. Given that people who do not have a Forestry Commission permit are excluded from access to forest resources in the GSBA, those who do access the resources to meet their livelihood needs are treated as criminals. The question is what is criminal and not criminal when it comes to people’s livelihood needs? Is it actually a crime to access forest resources to meet one’s livelihood needs? Amanor (2005) argues that such questions make it difficult for local people to acknowledge that what the law says is a crime is criminal indeed and they perceive that as injustice. According to the same author, they respond to the perceived injustice via ‘a culture of conspiracy’ and by violating forest laws, ‘as either an act of defiance or a desperate attempt at achieving subsistence’ (Ibid.: 16).
What conflicts over forest and tree resources occur and what conflict management strategies are employed around the modified taungya system in a plantations forest in the Tano-Offin forest reserve and what are their implications for the co-management scheme?

Based on a case study of the modified taungya system in the Tano-Offin Forest Reserve, Chapter 8 analyses the co-management context of the system and the arising conflict issues from the perspectives of the local communities.

1. What are the characteristics of the plantation forest (i.e. the modified taungya system scheme) in the Tano-Offin forest reserve as a system-to-be-governed, particularly with regard to the interaction of local communities with the natural system in their efforts to secure their livelihoods?

The modified taungya system (MTS) is a co-management scheme between the Forestry Commission and forest fringe communities for the reforestation of degraded forest reserves in Ghana, with the ultimate objectives being to realise sustainable forest management and poverty reduction. Under this system, participating farmers are co-owners of trees and entitled to a 40% share in the timber benefits. They furthermore have the right to plant food crops between the trees until canopy closure in return for their share in tree planting and maintenance. The plantation regime within the Tano-Offin forest reserve (mostly located in the production management area) consists of various compartments in degraded parts of the reserve, of which 82 ha and 70 ha respectively were allocated to the study villages of Chirayaso and Kunsu-Nyamebekyere No. 3 from 2004-2007 in order to realise a given plantation establishment target. The trees commonly planted by farmers under the MTS scheme (with food crops such as plantain, cocoyam, vegetables and maize) include the exotics Cedrela odorata (cedrella) and Tectona grandis (teak) and indigenous species like Terminalia Superba (ofram) and Entandrophragma spp. (African mahogany).

With farming being the major occupation in the two villages, the food crop component of the modified taungya system has contributed to the livelihoods of the inhabitants who participate in the scheme. Some key benefits that have improved the wellbeing of the MTS farmers are (i) employment in the form of farm labour and micro-enterprises (notably petty trading) that could be established thanks to the revenues from the MTS plots, (ii) improvement in school attendance by their children, (iii) improved quality of their housing, and (iv) food security throughout the year.

2. What are the characteristics of the governing system (i.e. institutional arrangements) that steers the plantation regime?

The modified taungya system is a first collaborative arrangement between farming communities and the Forestry Commission with legal backing, clearly defined institutions and a benefit-sharing scheme. The institutional framework shows a partnership of stakeholders ranging from state and non-state actors to the international community, which indicates the diversity of actors and the multi-faceted character of the arrangement. The contractual agreements between the Forestry Commission and MTS groups offer the taungya farmers some formal powers in terms of leasehold over land and access to the forest reserve to farm, with the decision-making responsibilities of the taungya committees as well as the farmers being quite circumscribed.

The findings support Marfo’s (2009) statement that the modified taungya system represents a significant tenure reform in which, for the first time in Ghana, local
communities and individuals have direct ownership rights over trees in state forest reserves and specifically prescribed benefits based on mutual agreements.

3. **What are the perspectives of the inhabitants of the communities at the forest plantation fringe regarding the nature of forest and tree-related conflicts in the plantation regime?**

   The modified taungya system operations were found to centre around three conflict categories. These were (i) conflicts related to institutional and operational arrangements, (ii) conflicts resulting from competing claims, and (iii) anticipated conflicts resulting from uncertainty about the future of the partnership. The study revealed that the outcomes of most of these conflicts helped to continue shaping the system. This confirms the notion that conflicts are a means of social learning to improve a situation, and should therefore be regarded as positive capabilities (Burgess & Burgess 1996, Glasl 1999).

4. **What conflicts outcomes arise and what are their effects on the governance arrangements?**

   Some of the conflict outcomes analysed in Chapter 8 influenced the functioning of the modified taungya system in a positive manner. After field verification of complaints about the disproportionate allocation of forestland by the taungya leaders to themselves, farmers from one community (Chirayaso) reported some lessons learnt that led to the improvement of the system during the 2009 planting season. The field verification team consisted of Forest Services Division officials, representatives of chief and elders, the aggrieved farmers and the taungya farmers, which ascertained the alleged accusation against the leaders and took four decisions in the presence of the entire community to solve the conflict, with consequences for the composition of the MTS committee and the governance arrangements in place for the allocation of plots and the fees to be paid. The outcome of another conflict – the coercive action taken by Forest Services Division officials against disobedient farmers who failed to plant timber trees on their plots – resulted in the exclusion of non-cooperating farmers. Regarding the anticipated conflicts arising from tenure insecurity and uncertainties, the Forestry Commission has secured donor funds to register all farmers and address outstanding issues concerning the agreement. Disputes over farming boundaries and conflicts associated with food crop theft, the destruction of crops and trees through the use of fire for hunting and illegal chainsaw operations turned out to be much harder to resolve, although public announcements sometimes result in a temporary decline of timber and crop theft.

5. **Challenges**

   Unfortunately the co-management component of the partnership between the Forestry Commission and the modified taungya system farmers has not entirely been a continuous problem-solving process. This is because, in terms of decision making, it portrays features of a fixed state system that are meant to serve the interests of the Forestry Commission rather than of a process that embraces joint decision making for the benefit of both parties. This was clearly seen in the context of the third conflict category of uncertainty about the future of the partnership, which may undermine the potential of the modified taungya system as an effective co-management arrangement where lessons are learnt for further improvement of forest governance.
Several options for improvement of the system are provided in Chapter 8.

What conflicts over forest and tree resources occur and what conflict management strategies are employed in a production forest in the Tano-Offin forest reserve and what are their implications for law enforcement?

Chapter 9 addressed conflict incidences in the production forest regime in Ghana’s high forest zone and the implications of the findings for law enforcement under the Voluntary Partnership Agreement. The analysis is based on a review of documentary sources, the administration of semi-structured questionnaires among 137 inhabitants of the villages of Chirayaso and Kunsu-Nyamebekyere No. 3 bordering the Tano-Offin reserve, and validation meetings.

1. **What are the characteristics of the production forest in the Tano-Offin forest reserve as a system-to-be governed, particularly with regard to the interaction of local communities with the natural system in their efforts to secure their livelihoods?**

   Ghana derives most of its timber revenues from the production regime in forest reserves. Chapter 9 revealed that interaction between the prevailing governing system and the human system poses challenges for the governability of the natural system. Local people rely on forest resources in the form of land under the modified taungya system, chainsaw milling, NTFPs for domestic use and trade, and forest services (i.e. boundary cleaning, working with timber firms and as forest guards). Individuals from other levels of scale often access forest resources illegally and this is associated with conflicts. Law enforcement as envisaged under the Voluntary Partnership Agreement is therefore essential.

2. **What governing system (i.e. institutions and policy instruments) functions in the production regime?**

   Four governing structures were identified under the production regime, belonging respectively to the statutory, market, customary and hybrid governing systems. Under the statutory governing system, the Forest Services Division of the Forestry Commission is the main actor, particularly the range supervisors (in charge of timber exploitation in a certain forest area and responsible for conducting stock surveys and measuring felled trees to estimate tree volume) and forest guards (responsible for clearing the reserve boundary and patrolling the reserve in order to prevent illegal activities). The judiciary and police also play a role, as outlined in Chapter 11. Under statutory law, production forests are divided into compartments of approximately 128 hectares each (1,600 m x 800 m), a group of which constitutes a concession or timber utilisation contract (TUC) area where trees are felled according to a harvesting plan as stipulated in the Manual of Procedures. Actors based in the market governing structure (but subject to statutory law) are the TUC holders, who obtain contracts through competitive bidding and who are allowed to operate for a period of one cycle, which corresponds to forty years, and chainsaw millers, who operate illegally. Traditional authority at village level takes the form of the chief, queen mother and elders, who are based in the customary governing structure. Finally, the hybrid governing structure encompasses the Unit Committee, the Community Biodiversity Advisory Groups (CBAGs) and Community Forest Committees, which operate at community level as intermediaries between the statutory and customary structures. Benefit arrangements include royalties (that accrue to the Forestry Commission, the
Administrator of stool lands, the District Assembly and traditional council and stool land owner), Social Responsibility Agreement payments to the community and crop damage compensation for the farmers.

3. **What are the perspectives of the inhabitants of the communities at the production forest fringe regarding the nature of forest and tree-related conflicts in the production regime?**

Chapter 9 showed that, in view of the multiple kinds of resource users and their diverging interests, the regime is characterised by conflicts that can be classified into three conflict categories, namely (i) conflicts related to forest resources (related to chainsaw milling, non-timber forest products for domestic use and for trade, and hunting), (ii) operational conflicts with timber utilisation contracts (TUC) holders (related to log theft and negotiations about Social Responsibility Agreement payments and crop damage compensation), and (iii) land-use conflicts (boundary disputes and illegal farming). Each of the conflicts are driven by both manifest behaviour (e.g. confiscation of forest resources, arrest of offenders, crop destruction, road barricades, disobedience of rules, etc.) and antecedent conditions (e.g. greed, corruption, economic hardship and poverty, reluctance to fulfil Social Responsibility Agreement obligations, bureaucracy and poor law enforcement).

4. **What are the implications of the findings for law enforcement?**

In relation to these conflict situations, four possible outcomes were identified: (i) communities and farmers succeed and/or fail to materialise their benefit rights, (ii) communities and chainsaw millers gain and/or lose access to forest resources, (iii) timber utilisation contract (TUC) holders lose timber rights to chainsaw millers and other TUC holders through timber theft and (iv) the Forest Services Division fails to materialise revenue rights due to illegal logging. The outcomes indicate that stricter law enforcement under the Voluntary Partnership Agreement (VPA) is urgently needed to save the forest resources. However, there is a risk that it results in a temporary ‘pseudo-reduction’ of illegal forest activities and that the system may be reversed to its original state of illegalities if the underlying factors are not addressed. The situation may even escalate if local people, driven by need or greed, succeed in creating alternative routes to access the same resources despite stricter enforcement. Law enforcement should, however, be the last resort for ensuring compliance with the law and should be complemented with ‘soft’ enforcement mechanisms. In connection with this, three issues were suggested for consideration in the design of strategies for soft law enforcement, namely to (i) develop the capacity of stakeholders (particularly resource managers and frontline staff of the Forest Services Division) in conflict management and integrate conflict management into the VPA system, (ii) enhance forestry extension by improving forestry education at local level, and (iii) engage inhabitants of forest fringe communities in forest management on a remunerated basis. Funds from REDD+ and other climate-related financial mechanisms could be used to enhance the budget available for such measures.

5. **Challenges**

In addition to persisting conflicts, three challenges influence the Tano-Offin production forest regime. First, the regime contributes to the livelihoods of local people, in accordance with findings in general literature on forest-based livelihoods (e.g. Fal-
coner 1992, World Bank 2001, Ros-Tonen & Wiersum 2005, Ros-Tonen & Dietz 2005, Sunderlin et al. 2005) that identify the various benefits local people derive from the forest to build their livelihoods. However, Chapter 9 indicates that most resources are accessed illegally with the exception of collecting non-timber forest products for domestic use, which is considered a communal right in management plans (Kyereh et al. 2006). In such cases, the issues of legality result in a clash between the system-to-be governed (i.e. the human system) and the governing system (i.e. rules, laws etc.). Second, Act 547 (amended 617) restricts legal access of timber harvesting to timber utilisation contract holders, thereby denying some actors access. This supports what Ribot & Peluso (2003: 154) conceptualised as ‘bundles and webs of powers’, meaning powers that enable some actors to gain control and maintain access, as in a production forest where access to, control of and gains from commercial timber harvesting are limited to forest managers and timber utilisation contract holders. Those who perceive the governing laws as being unfavourable to their survival start to be regarded as ‘criminals’ when they access the resources in violation of the law and are apprehended. Third, the study revealed that the flow of benefits to local communities from timber resources trickles down from social responsibility agreements and crop damage compensation for individual farmers as stipulated in Act 547 (amended 617). However, these do not often reach local people and even when they do, they are often inadequate and that leads to suspicion. Conflicts of this kind mostly occur either between or among timber contractors, local communities and farmers. Asare (2006) noted that the legislation lacks specific regulations on how to determine compensation and ensure that farmers are ‘fairly compensated’.

What factors facilitated the cooperation between the local community and the timber operator in Tano-Offin off-reserve area?

The off-reserve landscape is usually a contested field where conflicts occur between timber operators, officials of the Forest Services Division, local communities and their traditional leaders and farmers. The diversity of actors coupled with diverging governing rules for land and timber trees underlies the complexity of this landscape. However, the case study addressed in Chapter 10 revealed a situation of cooperation rather than conflict, and this raised the question of what factors facilitated this cooperation.

1. What are the characteristics of the Tano-Offin off-reserve area as a system-to-be-governed in terms of the natural and socio-economic sub-systems and the interaction between the two?

Chapter 10 focuses on Ghana’s off-reserve areas as the system-to-be-governed, which as a natural system is endowed with timber resources in patches of forest, fallow and farmlands. These areas are an important source of timber revenues for the country and some of its stakeholders as they still hold some rare timber species (Kyereh et al. 2006, Affum-Baffoe 2009, Hansen & Treue 2009, TBI 2009). They are also the major source of agricultural livelihood for local people who cultivate cash and food crops for income and domestic use. The results revealed that, even though the local inhabitants of Awisasu live close to the Tano-Offin forest reserve, they collect non-timber forest products for domestic and commercial use, mainly from fallow land in the off-reserve area. In addition, the off-reserve area provides them with their major sources of income from cash crops (especially cocoa) and food crops.
2. What governing systems (i.e. challenges and opportunities, access to farming lands, customary and statutory arrangements) operate within the Tano-Ooffin off-reserve area?

The off-reserve landscape presents a complex governing system because of the multiple governing structures involved and the different governing rules for land and timber trees. Access to land for the cultivation of crops is mostly through the stool or family, through a chain of hierarchy. A person who acquires land directly from the stool could also engage in different crop-sharing arrangements with other farmers. Through one of these arrangements, the abusa sharecropping system, a tenant farmer can also become a local landowner (Hill 1956 cited in Amanor & Diderutuah 2001). On the positive side, this mode of land transfer enables a tenant to become a local landowner, but the system also contributes to land fragmentation. Prior to the introduction of scientific forestry in the early 20th century, the right to access and explore timber resources in off-reserve areas was in the hands of the farmer and the local town chief (Amanor 2005). Scientific forestry changed this pattern by vesting custody of land in the paramount chiefs (see Chapter 5), which excluded local people and farmers from timber resource benefits. A general call for collaboration resulted in a policy that granted rights to benefits to local people and farmers. These benefits range from social responsibility agreements for local communities, to crop damage compensation for farmers in off-reserve areas, ownership of planted trees and consultation with local people before logging proceeds in off-reserve areas. In the Awisasu community, the diversity of governing structures (i.e. the statutory, customary and hybrid governing structures) created an environment conducive to strong social ties and networks.

3. What are the perceptions of the inhabitants and the timber operator on why crop damage compensation and social responsibility agreement conflicts are minimal or absent?

The case study of Awisasu community presents a scenario of cooperation that contrasts with the frequently cited conflict status of off-reserve areas. This cooperation was achieved based on the construction of social capital elements such as networking, shared responsibility, and the creation of social ties and trust by the timber contractor, which was reciprocated by the local people. This confirms Portes’ (1998: 3) statement that ‘social networks are not a natural given and must be constructed through investment strategies oriented around the institutionalisation of group relations, usable as a reliable source of other benefits’. This case study also showed that the concept of social capital aligns well with interactive governance theory, and this supports the argument by Trimble & Berkes (2010) that there can be synergy between interactive governance theory and the social capital framework.

4. What are the views of government officials with regard to crop damage compensation and recommended actions for improvement?

The informal discussions held with government officials centred on the governance elements – images, instruments and actions. The Forestry Commission mediates in social responsibility agreement negotiations, but in the case of compensation payment negotiations only when the contractor and farmer do not reach an agreement and one of the parties sends a petition letter. When consulted, the Ministry of Food and Agriculture (MOFA) and Land Valuation Division (LVD) have an instrument to
calculate compensation payments for crop or property damage. The officials recommended strategies such as the installation of a customer services officer at the Forestry Commission to play a mediating role and design procedures for negotiating compensation with farmers as a means to minimise confrontations between farmers and timber contractors.

5. Challenges

Due to the diversity of actors in the off-reserve landscape and the different land-use systems competing claims are common. If these are not managed properly they result in conflicts associated with loss of livelihoods and environmental degradation (Ohlsson 2000). Generally speaking, the procedure for establishing crop damage compensation is subjective and controlled by the timber contractor. This was also the case in this study, despite its conflict free scenario. Another challenge is inherent in the prevailing legislation which denies farmers and local people access to timber resources from naturally regenerated trees on their farmland, while compensating them inadequately through crop damage compensation and social responsibility agreement obligations. However, such a scenario was not observed in this study.

What are the characteristics of forest offences and their judgements in law courts in Nkawie forest district and the views of representatives of law enforcement agencies and the judiciary regarding institutional challenges and means to overcome them?

Chapter 11 aimed to contribute insights into challenges related to forest law enforcement by analysing forest offence records from the period 2005-2010, court judgements on twelve forest cases in the Nkawie forest district and based on semi-structured interviews with nineteen officials from the Forestry Commission, Ghana Police Services and the judiciary.

1. What are the characteristics of the Nkawie Forest District reserves as a system-to-be-governed?
The Nkawie Forest District is one of the seven forest districts in the Ashanti region under the jurisdiction of the Forest Services Division of the Forestry Commission (see Chapter 4). The Forest District is headquartered at Nkawie, about forty-five minutes’ drive from Kumasi, the capital of the Ashanti Region. There are six forest reserves under the management of the Nkawie Forest District with a total area of 1,019.72 km². These are the Asenayo, Desiri, Jimira, Offin Shelter, Tano-Offin and Tinte Bepo forest reserves.

2. What governing system (i.e. institutions and legislative framework) with regard to law enforcement is available in the forest district?
The accessing, processing and conveying of forest resources without a permit constitutes a criminal offence as stipulated in the Act 547 (amended 617), LI.1649 and the National Redemption Council Decree (NRCD) (amended 642). Thus, every illicit activity in forest reserves and off-reserve areas especially related to timber resources is treated as a criminal offence. In the context of Ghana, both the police and the Forestry Commission are law enforcement agencies. The duty of the Forestry Commission is to enforce the regulations that govern the country’s forest and tree resources and the role of the police is to ensure due enforcement of the law. These two agencies exist to ensure that the government machinery fulfils its policies, objectives and
programmes while protecting life and natural resources. Whereas the Forestry Commission and the police are the executive branches of government and thus answerable to it, the judiciary is the wing of the judicature and is autonomous. Whereas the law enforcement agencies aim to secure a way of preventing crime and punishing offenders, the judiciary aims to administer the law impartially while observing human rights and fair judgement.

3. **What governance interactions arise from the system-to-be-governed and the governing system and what are their outcomes?**

The documented analysis of the forest offences revealed eight forest offence types with prevalent cases being chainsaw milling, illegal logging and illegal farming. Between 2005 and 2010, the district recorded 121 offences with more offences occurring in the on-reserve areas than in off-reserve areas. This contrasts with the findings of Abugre & Kazaare (2010) in a similar study in three forest districts in Brong Ahafo region, where most offences tend to occur more in off-reserve areas than in on-reserve areas. The difference between the two studies could be due to the different location of the study areas with particular needs of inhabitants and ease of access to on-reserve and off-reserve forest. Nonetheless, both studies have highlighted that the timber species which is most exploited illegally is *Triplochiton scleroxylon* (wawa), a scarlet star-rated species which is under imminent economic threat. Analyses of the official records revealed lapses in record keeping since there are no references to the outcomes of offences, especially those relating to cases under investigation by the police and regional Forest Services Division. If the twelve forest-related unreported judgements analysed, only two of the cases referred to the legislation that governed the forest offences and their sanctions. The rest of the court rulings made no mention of relevant legislation. Even though the legislation clearly states that vehicles carrying illegal products must be confiscated by the state, none of the rulings were strictly applied. Rather, once an offender had been fined or had served his/her prison term, the vehicles were released to the owner.

4. **How do the Forestry Commission, the Ghana Police Services and the Judiciary perceive their institutional roles in dealing with forest offences?**

The perceptions of officials of law enforcement agencies revealed that they perceived the collaboration between them as weak, and this affects the law enforcement process. This study revealed a common belief in the inadequate institutional capacity among the Forestry Commission, police and the judiciary to apply existing sanctions and enforce the law in practice. This is clearly demonstrated by, for example, the high volumes of illegally produced chainsaw lumber and timber logs, widespread illegal farming and illegal mining. Some of these problems are attributed to existing legal instruments. First the failure of the court to apply severe penalties for forest encroachment in order of priority was attributed to political, social, economic and environmental motives. In addition, forest offences are poorly documented. Even though respondents had different opinions with regard to the necessary actions to manage forest and wildlife crimes, they advocated the organisation of consultative workshops and seminars to educate the judiciary and the police on the effect of environmental damage to the nation. These proposals for capacity building correspond with the recommendation for training of police, prosecutors and judges by Christy *et al.* (1997: 153).
5. Challenges

Although applicable forestry laws exist, they largely seem to exist only in the statutes. At the same time, of the twelve forest-related judgements analysed, only two referred to the legislation that governed the forest offences and their sanctions. In none of the twelve cases were the sanctions applied strictly because it was unclear what maximum prescribed penalty was stipulated in the legislation. It also became clear that (for instance with regard to the confiscation of vehicles carrying illegal products) none of the rulings had been strictly applied. The analyses of the official records also revealed lapses in record keeping, since the outcomes of offences were not registered. This applied to cases under police and regional Forest Services Division investigation in particular. This makes it difficult to assess whether actions taken against these offenders actually have a positive impact on the level of offences in the district. Even though there has been a marginal decline in recorded forest offences from 2005-2010, this marginal decline might be due to the inefficiency of the Forest Services Division monitoring system or to the Forestry Commission’s incapacity to detect the offenders and record the offences.

Governability implications of the study

The ultimate aim of interactive governance theory is to assess governability – ‘the overall capacity for governance of any societal entity or system’ (Kooiman 2008: 173) – and to dissect the key variables that help understand how and why governance implementation falls short of achieving desirable outcomes’ (Chuenpagdee & Jentoft 2009: 113). Based on the conceptual framework (Figure 2.4) developed in Chapter 2, three possible assumptions on governability outcomes for forest and tree-related conflicts in Ghana were formulated. Scenario 1 presents a positive outcome, which implies that the system is governable and that one can sense an atmosphere of cooperation or collaboration or even competition, but without conflicts. This also implies that the interaction between the system-to-be-governed and the governing system is mutually responsive. It was assumed that such a scenario does not often occur in reality, especially in the natural resource arena where different kind of actors operate at different spatial scales and compete for limited resources and where policies restrict access rights for some actors and impose other limitations. However, the study in the Tano-Offin off-reserve area proved otherwise. Here, a timber contractor learnt from his previous experience with the local community to build a cooperation scenario. This was based on constructing elements of social capital, including networking, shared responsibility and the creation of social ties and trust by the timber contractor, which was reciprocated by the local people. This situation, which refuted my first hypothesis regarding governability outcomes, can be regarded as the ideal situation that interactive governance theory is looking for and one in which mechanisms and instruments are well formulated, in which policy becomes a learning process and actors are actively involved in the governance process.

Scenario 2 assumes that the system is not governable, which signifies a situation of social unrest or complete resource degradation and lawlessness. Such a scenario could happen in practice and may call for a complete governance reform or a new innovation. It is interesting to note that such a situation of complete non-governability has not been observed in any of the case studies.

Scenario 3 assumes that the system may be governable but with limitations. This was the scenario that applied to most of the analysed cases. With the exception of Chapter 10, the analyses in Chapters 4-11 presented scenarios of inherent governability chal-
challenges in the components of the governance system, in either the system-to-be-governed, the governing system or governance interactions. The main limitations identified in the study are (i) the absence of recognition of the importance of conflict management as an integral component of forest governance in Ghana forest sector, and (ii) restrictions imposed on local people enclosed in a forest reserve and a governing system that does not function in their favour, thereby prejudicing their livelihood options.

Conclusions regarding the empirical chapters
The eight empirical chapters and findings from this study justify the four research propositions presented in Chapter 1. The study has demonstrated that forest resource use and management are indeed complex, dynamic and involve multiple users at different levels of scale and consequently, and that they are characterised by conflicts (proposition 1). Ineffective conflict management and absence of appropriate conflict management systems in the forestry sector is one of the main causes of the widespread conflicts and the resultant rapid rate of deforestation (proposition 2). The interactive governance approach provided analytical and normative means of understanding the governability of the different components of the forest management regimes (i.e. protection, plantations, production, and off-reserve) (proposition 3). A combination of interactive governance theory and conflict analysis presented a clear picture of the nature of conflicts and their underlying factors based on the forest actors’ images, as well as the prevailing conflict management mechanisms (instruments and actions) in Ghana’s high forest zone (proposition 4).

Theoretical implications
Some theoretical implications of this research have already been stated in the previous sections in support of the empirical findings. This section briefly revisits the theoretical strands of this study in order to enhance our understanding of forest governance, conflicts and conflict management strategies in the high forest zone and how they can be improved and constructively managed.

Political ecology suggests, first, that there are multi-scalar and dynamic interactions between people and natural resource systems, which are mediated by institutions (Dietz 1996). Using an interactive governance approach allowed me to analyse the interactions between resource users (i.e. local people and timber contractors) and forest resources as means of livelihoods under different forest governance regimes, as well as to complement this by studying governance interactions between the system-to-be-governed and the governing system. Second, political ecology highlights the politics of these interactions and the power imbalances involved (Bryant 1992, Dietz 1996, Gezon 1997, Blakie & Brookfield 1987, Peet & Watts 1996). This study illustrated these politics and power imbalances by analysing the conflicts between various actors within and beyond the community level and by revealing their direct causes (manifest behaviour) and indirect causes (antecedent conditions). It also showed that power plays by either politicians or important actors in the logging industry may affect the political will to deal effectively with forest offences and thus hinder law enforcement. Third, political ecology stresses uneven access to resources as a cause of imbalanced interactions, as became obvious particularly in Chapter 7 which illustrated how local people living in a protected area were excluded from access to forest resources, and in Chapter 8, where uneven access to degraded forestland to establish forest plantations under a co-management arrangement
resulted in conflicts. Hence, this study has shown that political ecology aligns well with interactive governance theory developed by Kooiman et al. (2005), whereas the conflict analysis wheel developed by Mason & Rychard (2005) helped to deconstruct the various conflict dimensions. The conceptual framework presented in Chapter 2 illustrates how these different theoretical components were connected.

Scholarly literature on forest-based livelihoods explains how forest and tree resources contribute to livelihoods and society as a whole in diverse ways, ranging from timber to non-timber forest resources, ecological services and farming land (Angelsen & Wunder 2003, Kaimowitz 2003, Sunderlin et al. 2005, Ros-Tonen & Dietz 2005). These varied contributions are also noted in this study, which identified timber, NTFPs, farming in the forest reserve under the modified taungya system and illegal farming as direct livelihood sources and compensation payments in the form of social responsibility agreement and crop damage compensation (see Chapters 9 and 10) as indirect ones. Remarkably, indirect contributions by forest environmental services to livelihoods were not mentioned by either forest governors and experts or forest users involved in this study. As yet, intangible benefits of forest resources are not widely recognised in Ghana, with the exception of the local people around the Tano-Offin forest reserve (see Chapter 4). This may change in the near future if environmental services become a source of cash income through carbon credit schemes and other payments for environmental services (PES) under REDD+ schemes, as a compensation for keeping the forest intact.

Literature on conflict and conflict management by a variety of authors (Moore 2003, Homer-Dixon 1994, Engel & Korf 2005, Buckles & Rusnak 1999, Wehrmann 2008) was used to analyse natural resource conflicts’ contexts, issues, actors, causes, dynamics, dimensions, characteristics and conflict management strategies. Three theoretical reflections apply here. The first refers to the definition of conflict. The commonly agreed definition of conflict among the respondents involved in this study is relevant to conflict theories, as no such definition can be found in conflict literature (Fink 1968, Schmidt & Kochan 1972, Wall & Callister 1995). Their common understanding of a forest and tree-related livelihood conflict (Chapter 6) is ‘a dispute over natural resources by two or more parties regarding the allocation, access, use, ownership and/or benefits of dwindling resources’. This definition and other answers reveal two things. First, they make it clear that policymakers, resource managers and forest experts in Ghana use the terms ‘conflict’ and ‘dispute’ interchangeably when discussing types of forest and tree-related conflicts in the high forest zone. This confirms the statement by Spangler & Burgess (2003) that it may in fact be difficult for most people to recognise the difference between the two. Second, the definitions provided by the respondents are also evasive in respect of seeing conflict as violent incidences, and this could result in destruction of properties and even death. This is, however, in line with the findings in the case studies in Chapters 7-9, which confirm that local people perceive most of the forest conflict types as being non-violent rather than violent. This study is therefore a contribution to overcoming a pitfall in conflict literature mentioned by Axt et al. (2005: 5) that most conflict studies focus on violent rather than non-violent conflicts. This relates to the second reflection on conflict theory regarding the causes of conflict. The conflict causes identified in this study align well with those identified in general conflict literature (e.g. Tyler 1999, Schmidt & Kochan 1972, Homer Dixon 1994) and confirm statements in literature that conflicts differ according to context (Moore 2003, Wall & Callister 1995). Most conflicts in Ghana’s on and off-reserve forest areas are related to people’s liveli-
hoods and to laws that restrict their access to forest resources. Particularly Chapter 7 revealed the prevailing scarcity of farming land and forest resources among the inhabitants of the admitted village of Kyekyewere, which partly supports the environmental scarcity and conflict theory of Homer Dixon (1994, 1999). This theory sees conflicts as inevitable due to the increased scarcity of natural resources, which in the context of this study emerged from restricted access according to prevailing forest laws. As already clarified above, the findings of this study differ, however, from Homer Dixon’s proposition in that the majority of conflicts in the study area cannot be qualified as violent. The third theoretical observation is that categorisations and continuums of conflict management strategies by scholars such as Moore (2003) and Wehrmann (2008) (see Chapter 2) are also applicable in Ghana’s high forest zone.

Finally, this study showed that interactive governance theory, developed for the fisheries sector (Kooiman et al. 2005), can be easily applied in a forest context. Interactive governance theory suggests that conflicts can be managed constructively if societal problems are identified and analysed collectively by actors with a view to creating opportunities. By blending interactive governance theory (from both an analytical and a normative perspective) with the conflict analysis wheel (Mason & Rychard 2005), this study has provided a better understanding of the governance context of Ghana’s high forest zone, the nature of conflict and conflict management strategies, and proposals for their improvement. However, this study has also made it clear that in Ghana, and other countries of Sub-Saharan Africa for that matter, actor analysis needs to go beyond the conventional division between the state, the market and civil society as used by Kooiman & Bavinck (2005, 2008), Owusu (2009) and many other authors. Considering the transitional nature of the Ghanaian governance process, a number of actors do not fit neatly into one of these categories. This study therefore suggests that a distinction be made between statutory, customary, market, civil society and a hybrid governing structure, embedded in an overarching transnational governing structure.

Whereas these four theoretical strands were selected as the major ones guiding the analysis of conflict and conflict management in Ghana’s high forest zone, it became clear in the course of the research process that (adaptive) co-management and social capital provided additional theoretical notions that proved to be useful for an interpretation of the co-governance arrangements in the modified taungya system (Chapter 8) and the cooperation scenario in off-reserve areas (Chapter 10) respectively.

**Recommendations for further research**

This study has identified some areas for follow-up research which could further our understanding of forest conflicts and provide more insights into interactive governance theory and its applicability in the forestry sector.

1. **Understanding the complexity and dynamics of forest conflicts:** Further research could examine the application of a causal loop diagram – as developed, for example, by Noorduyn (2005) – to link the causes and effects of the identified conflict types from an inter-related and interconnected point of view, thus doing justice to the complexity and dynamics of the situation. This may require a different management approach than a linear viewpoint. Secondly, research that would improve the categorisation of forest and tree-related conflict types into conflicts and disputes may be
essential before different conflict management strategies can be created separately for issues relating to the two terminologies.

2. **Assessing the governability criteria of the forest governance components:** Thanks to this study, interactive governance theory, which has hitherto been applied exclusively to fisheries, has now also been applied to forestry. Analytically, this study has used the theory to understand the opportunities and challenges within the three components of the forest sector, i.e. the system-to-be-governed, the governing system and governance interactions. Based on these analyses and a discussion thereof, the forest governors and experts involved in this study interpreted the theory from a normative perspective and suggested interventions to improve the governance process. There is a need for follow-up research to determine what the governability criteria are for each of the three governance components and how they function in practice. This would take interactive forest governance theory beyond conflict management, which was the focus of this study. For instance, the diversity, complexity, dynamics and scale issues prevailing in the system-to-be-governed that were analysed in this study based on documentary analysis can be further specified based on empirical research in each of the different forest governance regimes. Such research would provide primary data on the different management regimes (protection, production, etc.) and provide insights into the questions raised in this thesis on whether the high forest zone has the resilience to withstand the excessive pressure of over-exploitation of its resources and associated degradation by the socio-economic sub-system. Such a follow-up study would enable us to determine the governability of the system-to-be-governed and to contribute to informed policy decisions on how each forest governance regime is to be governed and managed. This calls for multi-disciplinary research involving researchers with a background in ecological and social sciences. In addition, the different principles and substantial values of third order governance (e.g. effectiveness, legitimacy, effective dialogue and conciliatory negotiations) proposed by the forest governors and experts (see Figure 5.3 in Chapter 5) need further analysis to assess their workability in the Ghana forest sector.

3. **A comparative analysis of farm land availability in admitted settlements in forest reserves and off-reserve settlements:** One key problem identified in Chapter 7 of this study is the restricted access to farming land among inhabitants of admitted villages in protected areas. As this is a major cause of forest encroachment, there is a need for research to verify whether restricted access to farming land is limited to only the inhabitants of admitted villages or also applies to people living in areas outside forest reserves. This issue has not yet been properly researched in Ghana and it would be presumptuous to attribute forest illegalities solely to confinement and inability to expand farms beyond the forest boundaries. In the midst of poverty and no direct benefits from the forest, encroachment is likely to happen in any case in which forest law enforcement is weak. This is what is happening in many forest fringe communities in Ghana as well as elsewhere. The question of whether people in admitted settlements access land in a different way to those in ‘open areas’ presents three issues that merit further research. First, research is needed to establish the linkages between forest encroachment and law enforcement and their implications for the governing system. Second, further research can make a comparison of the factors that facilitate forest encroachment in the two areas and their underlying causes and means of controlling
them. Finally, research is needed to assess whether local people in admitted villages take advantage of these farms to engage in other forest illegalities besides the illegal expansion of their farms. Such research is needed for informed decisions to be made regarding strategies to restrict the number of people in such areas.

4. **Assessment of conflict capability among forest managers:** Before building the capacity of forest managers in conflict management and other governance concepts there is a need to conduct an assessment of their competency in this field. Likewise, a needs assessment could serve as a baseline for capacity and curriculum development in forest conflict management.

5. **Explore opportunities to improve income security from the modified taungya system:** There is a need to increase security and the generation of intermediate income from the MTS between canopy closure and tree harvesting. Further research is needed on how such income can be realised through thinning, engagement in carbon schemes and cultivation of shade-tolerant crops to enable a farmer to stay on the piece of land until the trees mature.

**Recommendations for policy and practice**

This study generated substantive recommendations for consideration in the policy arena. These recommendations not only reflect the views of the researcher, but also those of the research respondents (i.e. forest governors and experts, members of local communities, actors working in international organisations, civil society and timber operators). Chapters 5-11 contain recommendations based on the empirical findings of each study. This section presents some core policy recommendations of relevance to the various forest actors.

**Recommendations to the Ministry of Lands and Natural Resources and the Forestry Commission**

1. **Integrate conflict management into forest management, policy and governance:** The entire study has clearly indicated that conflicts are part of Ghana’s forest sector. However, little consideration has been given to conflict management as an integral component of forest management, policy and governance initiatives. Conflicts are inherent in any natural resource to which multiple claims exist and should be regarded as challenges which need to be addressed by setting up appropriate institutions, structures and mechanisms for their non-violent management. This can be seen as a potential to strengthen forest governance if the process of problem solving is done in a transparent and fair manner, ensuring the equitable sharing of benefits and access rights and promoting conditions that can help create cooperative relationships. Considering these challenges, the forest governors and experts involved in this study have expressed their views on what actions they see as a point of entry for the establishment of constructive conflict management in the forest sector. Based on suggestions of the workshop participants, these challenges can be overcome by a combination of (i) a decentralised and interactive approach to forest governance with feedback loops during implementation, (ii) differentiated laws and regulations adapted to the specific conditions both on and off reserve, and (iii) the Forestry Commission sharing responsibilities, equitable benefits
and power and ensuring cooperation with key actors in communities and the private sector in order to facilitate the smooth operation of its activities. Furthermore, they identified the need to pay due attention to conflict management skills for forest practitioners in natural resource management academic curricula and a clearly defined position of customary laws within the statutory forest laws, with defined roles for traditional authorities. Such actions are to be integrated into the myriad of ongoing governance initiatives in the sector, of which the REDD+ framework is most relevant to conflict resolution. Due consideration must be given to the recommendations of forest governors, experts and local people in Chapters 6 and 9.

2. Embrace an interactive governance approach in Ghana’s forest sector:
This study indicated that a hierarchical mode of governance prevails in Ghana. This confirms the findings of Marfo (2006) who indicated that policymaking is the primary scope of politicians and bureaucrats, with occasional consultations with some established stakeholders. The same applies to the customary governing structure in which local political actors and traditional authorities are taking the lead. In a recommendation for improving conflict management in Ghana’s forestry sector, Marfo (2006) proposed a change in governance culture; one that accepts the multiplicity and diversity of actor representations and which allows the various actors to demand accountability from their representatives (Marfo 2006: 175). This study has shown that, from a normative perspective, the principles of interactive governance theory may lay the foundation for a new governance culture that creates space for a multiplicity of actors. An effective governance system would therefore mean that all key actors (those pertaining to the statutory, customary, market, civil society and hybrid governing structures) must be able to cooperate through consensus or compromise in a way that common needs and conflicting issues can be effectively addressed.

3. Recognise protected areas in the Voluntary Partnership Agreement initiative:
The Voluntary Partnership Agreement process that aims to combat illegal logging and improve forest governance does not consider protected areas as a management regime in its efforts to ensure the legality of timber resources and therefore does not seek to create social safeguards for the livelihoods of local people in these areas. Nevertheless, law enforcement may affect all forest management regimes, which means that the forest-related livelihoods of protected area inhabitants like the inhabitants of admitted villages in protected areas will be further restricted. The implementation of the Voluntary Partnership Agreement will have serious implications for protected area management. This means rethinking the governance conditions of protected areas, especially the status of admitted villages and farms where people have restricted access to forest resources and few legal options to build a better livelihood. Bodegom (2010) cautions that, although the Voluntary Partnership Agreement process is participatory, it is impossible to talk about its contribution to good forest and environmental governance if no measures are put in place to curtail resource depletion in protected areas. The recognition of protected areas in the Voluntary Partnership Agreement implementation process is therefore paramount for sustainable forest management (Chapter 7).

4. Capacity development of the Forestry Commission officials in law enforcement:
Capacity development of the Forestry Commission officials, both academically trained staff and field officers, is essential as already noted in Chapter 6. The example of the
South Carolina Forestry Commission in the United States can be followed, where officers are trained and certified in criminal justice in addition to, for example, forestry law, forest investigation and incident management.\(^1\) Law enforcement therefore becomes part of the training of the forest manager which is somehow missing in the training of forest managers in Ghana’s forest sector. The legal department of the Forestry Commission could extend its mandate from representing legal matters to advocacy for the Forestry Commission to establish its own prosecution system and building capacities of Forestry Commission officials in legal issues. There is also a need for officials of the legal department to have knowledge of natural resource management in addition to knowledge of laws, so that they have an in-depth understanding of the negative environmental effects of forest offences and how best to quantify them during presentation of cases in the law courts.

5. *The codification of forest law:*
There is a need for a codification of the laws that are directly related to forest management, meaning that vigorous attempts should be pursued to coordinate them effectively in a systematic manner. The superfluous nature of our legislation will not by itself solve the intricate and complex problems of forest management. Only a blend of soft and hard enforcement of these laws and imposing deterrent penalties on violators may help protect Ghana’s forests.

**Recommendations for academia**

1. **Recognise conflict management in Natural Resources Management studies:**
This study has revealed that conflicts in the forestry sector are inevitable, but that the management of these conflicts is ad hoc and occurs on a case by case basis, with traditional leaders playing a crucial role that in many cases exceeds the role of the Forestry Commission. The forest governors and experts involved in this study attributed this incapability among resource managers to their training. It is in view of this that this study proposes the introduction of conflict management in the academic curriculum of natural resources management in tertiary institutions (see Chapter 6).

2. **Promote interdisciplinary teaching in natural resource management:**
There is a need to teach forest law and prosecution procedures to staff of the Forest Services Division of the Forestry Commission and other natural resource management institutions by training them, posting students as interns at the police and judiciary and by integrating these topics into all academic curricula related to natural resource management. Revisiting the example of the South Carolina Forestry Commission in the United States cited in Chapter 11, the officers are trained and certified in criminal justice in addition to forestry law, forest investigation and incident management and among other topics. Law enforcement therefore becomes part of the forest manager training which is somehow absent in the training of forest managers in Ghana’s forest sector.

**Recommendation to civil society and international donors**

1. **Help building the capacity of forest managers and other forest actors in natural resource conflict management:**

\(^1\) http://www.state.sc.us/forest/le.htm (accessed on 25 October 2011).
The call to enhance conflict management capability among actors in natural resource management (both managers and users) is not new but is an echo of previous studies on natural resource conflict management (e.g. Marfo 2006, Yasmi 2007). Based on his study in Indonesia, Yasmi (2007: 168) advocated the empowerment of stakeholders in decentralised natural resource management to support their efforts to institutionalise conflict management. Similarly, in Ghana, Marfo (2006: 176) recommended building actor capacity to effectively mobilise and deploy useful instrumental resources in conflict management. In line with these researchers, this study calls for capacity development in conflict management among forest managers and other forest actors. This goes beyond providing knowledge on conflict and conflict management, to include equipping the actors with the requisite logistics to facilitate their work. First, strengthening the Forestry Commission frontline staff in the implementation of conflict management and legal proceedings is important because of their constant interactions with various forest actors. Gaining such skills may help detect early signals of conflicts and promote better communication to ensure sustainable forest management. These skills must be accompanied by logistics such as vehicles and protective clothing in order to enable them to monitor the activities in the forest on a regular basis, which helps to curtail illegalities at an early stage. In addition, there is a need to equip the Forestry Commission district offices with computers and accessories to enable their staff to keep proper records and track of forest offences cases. It is believed that training Forestry Commission officials will have a multiplier effect on other stakeholders, but this will not occur without technical and financial support from civil society and international donors.

Recommendation to the timber industry:
1. Strengthen the timber industry’s role in forest governance:
The role of timber contractors in forest governance tends to focus on accessing timber resources and benefit sharing in the form of royalties, social responsibility agreement payments and crop damage compensation for local communities and farmers. These roles have been reported to be entangled with conflicts (Amanor 2005, Marfo 2006, see also Chapter 9). It is therefore interesting to note that this study revealed a situation of cooperation instead of the frequently cited conflict scenario. This has been possible because the timber contractor in the study area invested in building social capital in the form of networking, shared responsibility and the creation of social ties and trust, which was reciprocated by the local people (Chapter 10). Such steps can be achieved by other timber contractors in order to bring unity between them and the local people. In view of this, attention is needed for capacity building in relation to the creation of social capital and conflict management skills.

Recommendation to the forest law enforcement agencies (i.e. judiciary, police and Forestry Commission)
1. Reform of the judiciary system in a way that recognises the importance of forest offence cases:
The judiciary must embark on a dramatic change in the way in which the legal system and its officials appreciate the nation’s forest and wildlife ecosystem and their associated benefits. If the law or forest legislature is not recognised as a catalytic tool to aid development of the forest sector through a blend of soft and hard law enforcement the nation stands to lose its rich plant and animal resources in the near future. Without such
drastic changes, the infusion of financial resources into the forest sector by government-
mental, non-governmental and international donor organisations to promote good forest
governance in Ghana will not guarantee the transformative progression envisaged in
ongoing governance processes such as the Natural Resource and Environmental Gov-
ernance (NREG) programme, the Voluntary Partnership Agreement with the EU and
Reducing Emissions from Deforestation and Degradation through the enhancement of
conservation, sustainable forest management and forest carbon stocks (REDD+).

2. Institutional collaboration and strengthening:
There should be complementarity between the law enforcement agencies and the judici-
ary. Drawing from Lubinda (2007) it is therefore recommended that:

For the judiciary to be effective, law enforcement agencies must:
- Be up-to-date on the laws they are enforcing;
- Possess up-to-date knowledge of crimes and how they occur;
- Investigate cases thoroughly and conclusively;
- Present witnesses and evidence that is properly corroborated;
- Avoid adjournments and discontinuations of cases that are before the courts;
- Study court rulings/judgements of matters they are responsible for;
- Present cases in a clear, analytical and precise manner to convince ‘beyond any rea-
sonable doubt’.

For the law enforcement agencies to be effective, the judiciary should be:
- Up-to-date on the laws they are interpreting;
- Possess up-to-date knowledge of crimes and how they occur;
- Possess up-to-date knowledge on public aspirations and desperations;
- Analyse cases critically and conscientiously;
- Make references to rulings on similar matters;
- Avoid adjournments of cases before them;
- Present their rulings / judgement in a clear, analytical and precise manner to con-
vince the prosecution and other interested parties.

Conclusions
This study demonstrates that interactive governance theory which was developed for
fisheries is applicable in the context of forestry. It also illustrates the fact that the inter-
active governance framework can be adapted to include concepts related to conflict
analysis, political ecology, co-management and social capital for a better understanding
of the interactions between actors and between the natural and human system and the
conditions under which these lead to either conflict or cooperation in a given system. To
conclude, I reflect on the academic contribution of this work.

This study has provided an insight into constructive conflict management pathways
capable of minimising conflicts and contributing to the strengthening of the ongoing
forest governance process in Ghana. The answer to the key question of ‘what has this
study revealed that was not known before?’ is that this thesis provides some intellectual
contributions.

First, the thesis provides a theoretical framework to explore, analyse, understand and
provide interventions for forest governance, conflict and conflict management (or coop-
eration) in forestry by complementing four key theoretical strands (political ecology, interactive governance theory and forest livelihood and conflict theories) with theoretical concepts related to co-management and social capital.

Second, in the analysis of forest and tree-related livelihood conflicts in specific management regimes in Ghana’s high forest zone, this study has looked beyond the forestry (i.e. timber) sector proper to include the perspectives of other stakeholders from non-governmental organisations, the transnational community, academia, judiciary, the police, the private sector and local communities with a view to obtaining a deeper understanding of the societal problem at hand and to be aware of opportunities. Going beyond the timber sector allowed us to cover the full range of forest-related livelihood activities in relation to which conflicts occur in the high forest zone and the full range of forest management regimes, namely protection, plantation, production and off-reserve areas. Moreover, this study analysed both the statutory and customary structures that govern the various management regimes in addition to adding to documentation on forest offences and court proceedings to understand the constraints within law enforcement.

Third, this study shed new light on conflicts in off-reserve forest areas and illustrated that these can be properly managed to minimise conflict when timber operators learn to play an active role in the interactive forest governance process by building social capital.

Despite the many ongoing forest governance initiatives in Ghana that are intended to ensure sustainable forest management and good forest governance, conflict management still receives minimal attention. I hope this study will contribute to widespread recognition of the importance of this key building block of forest governance.