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REFRAMING LOCAL LAND USE PLANNING METHODS AND TOOLS IN SOUTH-WEST CAMEROON AS A FOUNDATION FOR SECURE TENURE, SUSTAINABLE AND EQUITABLE RURAL DEVELOPMENT, AND REDD+

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Abstract

This paper reframes the local land use planning methods and tools in South-West Cameroon as a foundation for securing tenure, sustaining and ensuring equitable rural development, implementing REDD+ and operationalising the many commitments to zero deforestation commodity production.

In tackling this objective, the paper presents a scenario for developing a Council land use and sustainable development planning methodology. Since 2014, a multidisciplinary, multi-partner team has compiled spatial data, and developed tools and methods for land use planning at the council level in Cameroon.

Council Land Use Plans (LUPs) are the lowest in the hierarchy (National, Regional, Council) of Land Use Planning defined in Cameroon's 2011 Land use Planning Law. Council LUPs present an opportunity to reconcile top-down planning to meet national and regional development goals with the aspirations of local communities. Stakeholders wish to secure tenure, attract public and private investment in rural development that improves rural livelihoods, reduces conflicts within and between communities and between communities, and between government and private sector.

Council LUPs founded on sound data and a thorough participatory process that merge bottom up consultation with top down goal setting and scenario analysis are anticipated to secure an important foundation for sustainable rural development, and new investment to tackle poverty and climate change.

Key Words: Land Use Planning; rural development; tenure; FPIC; REDD+

1. Introduction

Land is usable "in different ways to achieve different goals and it may be difficult to achieve all goals at the same time, which means making difficult choices when designing policies" (REED-PAC, 2015: 3). LUP is crucial for environmental, social and economic development. It is also essential for the empowerment of local people and for securing land tenure (Chigbu et al., 2017). Comprehensive Land use planning is an instrument for securing consistency, continuity and alignment between national and local development objectives with respect to the use of natural resources, investments in infrastructure, production and conservation (GIZ, 2012). Done well, it can create the preconditions required to achieve a type of land use that is environmentally sustainable, socially just and desirable as well as economically sound.

The concept and practice of LUP is currently undergoing scrutiny for change because of its perceived "state intervention in the life of the individual" (Egbu et al., 2016: 455). In North America and Europe, "there is wide spread experimentation in the flexibility of planning policies and programmes, with emphasis away from rigid plans to partnerships between the public and private sectors" (Egbu et al., 2016: 456). However, in sub-Saharan Africa, several challenges (deforestation, urbanisation, rural development needs, to mention a few) have exposed the need to for improved planning systems and practices that support local development. One of the sub-Saharan African countries where LUP is a big policy and development issue is Cameroon. Insecure tenure and conflicts over land reduce the effectiveness of many development projects and have derailed many private sector investments. Land Use Planning will need to tackle these conflicts head on. Indeed, even in industrialised countries such as the United Kingdom, it has been observed that conflict and politics are at the heart of land use planning (Collingworth and Nadin, 2016).

Land use planning in the context of overarching global and national development objectives

Land use planning and secure tenure are seen as foundations for both Cameroon's Rural Development Strategy (MINEPAT, 2016) and its National REDD+ strategy (MINEPDED, 2017). Land rights are linked to successful achievement of the SDGs, in particular SDG Goals 1, 2 and 5 (No Poverty, Zero Hunger, and Gender Equity, respectively) and their Indicators (see Box 1). Better management of forests are central to achieving SDGs 1, 2, 5, 11, 15.

Box 1: SDG Goals, Targets and Indicators that relate to land

SDG 1 – No Poverty

Target 1.4 *– By 2030, ensure that* ***all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property****, inheritance, natural resources, appropriate new technology and financial services, including microfinance.*

SDG Indicator 1.4.2 *- Proportion of total adult population with secure tenure rights to land, with legally recognized documentation and who perceive their rights to land as secure, by sex and by type of tenure*

SDG 2 – Zero Hunger

Target 2.3 *By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women,* ***indigenous peoples****, family farmers, pastoralists and fishers,* ***including through secure and equal access to land,*** *other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.*

SDG 5 – Gender Equity

Target 5.a: *Undertake reforms to give women equal rights to economic resources,* ***as well as access to ownership and control over land*** *and other forms of property, financial services, inheritance and natural resources, in accordance with national laws*

SDG Indicator 5.a.1 (a) *Proportion of total agricultural population with* ***ownership or secure rights over agricultural land****, by sex; (b)* ***share of women among owners or rights-bearers of agricultural land, by type of tenure***

SDG Indicator 5.a.2 *- Proportion of countries where the legal framework (including customary law)* ***guarantees women's equal rights to land ownership and/or control.***

Source: Land Portal: Land and the Sustainable Development Goals https://landportal.org/book/sdgs

Overview of Land Use Planning in Cameroon

Cameroon's ambitious national policies and sectoral strategies impinge on the rural environment. Global interests either to acquire land for commercial agriculture and forestry, or to secure forests to protect their ecosystem services (in particular biodiversity and carbon), compete with national food security and local community interests –within a finite space. Local communities have tended to lose out, having weaker land and forest tenure, declining access to resources and negative livelihood impacts. Local land use planning is seen as a promising tool to reconcile such interests in such a way as to redress the balance

between global, national and local priorities. There is a need for a methodological integration and development of new techniques for land use amelioration (Verburg, Schot et al., 2004).

In general, Cameroon's 2011 Land Use Planning law provides a supportive framework for modern, inclusive, multi-disciplinary, cross-sectoral planning. Principles defined by law are broadly in line with the generally accepted principles for land use planning (GIZ 2012, FAO 2012) though they lack clarity on implementation process, aspects of obtaining free prior informed consent (FPIC), gender equality and recognition of customary tenure.

The Ministry of Economy, Planning and Regional Development (MINEPAT) is mandated to guide the management and sustainable development of land. Contracts for preparation of the National Schema and Zoning Plan and all 10 Regional land use 'schemas' have been tendered out to private contractors in the past 2 years. But no land use policy, strategy, detailed legal texts or methodological guidelines have yet been published to guide their preparation. It is now urgent to clarify how the different land use plans will be aligned horizontally between sectors, and vertically between national, regional and local land use planning instruments. This alignment must be constructed simultaneously with preparation of the plans in a pragmatic and iterative approach.

The lowest level "local land use and sustainable development plans" envisaged by the 2011 law are prepared at the level of one or more municipalities (the lowest level of decentralized government). They are adopted by the Council(s) of the concerned municipalities.

A review of a) the legislation framing land use planning, land tenure, the powers of sectoral ministries to allocate land, and the role of councils in land management, and b) customary land management institutions reveals the duality of the national and customary land tenure systems. Decision-making about future land use is contested at multiple levels, underlining the need for local land use planning to engage all stakeholders from central Ministries who define policy and strategy, down to the level of communities in each village, to address conflicts and build consensus. The challenge of legitimate representation of dispersed rural communities poses significant implications for methodology, logistics and cost. Land allocations made without first resolving tenure conflicts already face substantial legal challenges and public criticism (Sciences Po Law Clinic, 2015). The costs of shortcutting planning, ignoring local tenure and failing to find consensus about government land allocation are probably much greater (TMP Systems and RRI, 2017).

Although the legal framework in Cameroon does not explicitly call for the consent of indigenous or local communities with regard to development on their lands, numerous legal instruments and processes form the institutional basis for the free, prior and informed components of FPIC. For example, the Framework Law on Environmental Management 1996[1] calls for local stakeholder consultations within environmental impact assessments, and the Orientation Law for Land Use Planning and Sustainable Development 2011[2] calls for local participation in all decisions regarding land allocation and use.

Cameroon has produced operational guidelines for obtaining FPIC in REDD+ Initiatives in Cameroon (MINEPDED, 2014). These could as well be applied to other non-REDD+ projects such as land use planning and natural resource management but implementation of FPIC in REDD+ (and other fields) is hampered by a number of legal and institutional barriers (Carodenuto and Kalame, 2015), including the non-binding nature of the FPIC guidelines and the challenges facing the Ministry of Environment in enforcing compliance. Methods for LUP must therefore explicitly build FPIC into the LUP process and institutionalize it across Ministries.

Sunderlin et al. (2018) concluded in a recent evaluation that attention to tenure is a fundamental step in preparation for REDD+ implementation. Unclear and conflicting tenure has been the main challenge faced by the proponents of subnational REDD+ initiatives, and accordingly, they have expended much effort to remedy the problem. However, the early REDD+ initiatives have not (overall) made significant progress toward reducing tenure insecurity, in spite of the paramount importance of tenure to the REDD+ agenda, and the large amount of effort proponents have invested in it. The authors summarised that work on tenure remains an urgent priority for safeguarding local livelihoods as well as for reducing deforestation.

Land Use Planning as an essential tool to implement REDD+ and to translate high-level commitments to zero-deforestation commodity production into reality

Current land use is determined by historical decisions, population, production, consumption and trade patterns. These must be projected into the future, to show the impact of changes in population (including natural growth, in- and out-migration), changes in production systems, consumption and trade patterns

[1] Law No. 1996/12 of 5 August 1996 relating to environmental management in Cameroon (1996 Framework Law on Environmental Management), Art. 7.
[2] Law No. 2011/008 of 6 May 2011 providing orientation for land use planning and sustainable development of Cameroon's national territory, Art. 6.

and how they will affect land use, at the local, national and global levels (van Asselen and Verburg, 2012, 2013; Eitelberg et al., 2015; Ornetsmüller et al., 2016).

In addition to markets for agricultural commodities, global markets and national strategies for other environmental values are being developed – in particular for the protection of carbon stocks in forests to address climate change through the REDD+ approach (FCPF, 2013).

Niche markets (access to restricted markets and/or price differentials driven by international consumer pressure) for 'zero deforestation' commodity production are also evolving for oil palm, cocoa and other products, although initial results are disappointing (FPP, 2018, Haupt et al., 2017, EIA, 2015, Ruf and Varlet, 2017) with the need for greater commitments to both national laws and international standards (Colchester, 2016), as well as jurisdictional and landscape approaches to avoid leakage (Haupt et al., 2017).

The potential for generating income from Payments for Environmental Services and from premium commodity production must therefore be considered during land use planning decisions, alongside anticipated trends in agricultural commodity markets (demand, price). Indeed, a number of analysts, and this project team, have concluded that binding land use plans, negotiated with the FPIC of local communities (Anderson 2011) may be a prerequisite to enable achievement of the goals of REDD+ (Dewi et al., 2013; FCPF, 2013; World Bank, 2017; Bourgoin et al., 2012; Gwaleba and Masum, 2018; Samndong et al., 2018, Haupt et al. 2017) and zero deforestation commodity production.

Participatory land-use planning is an important step in ensuring that local communities are engaged in negotiating REDD+ schemes and that such negotiations are transparent. Local participation and agreements on land-use plans could provide a sound basis for implementation of REDD+ and the efficient measurement, reporting, and verification systems that are an integral part of the REDD+ mechanism.

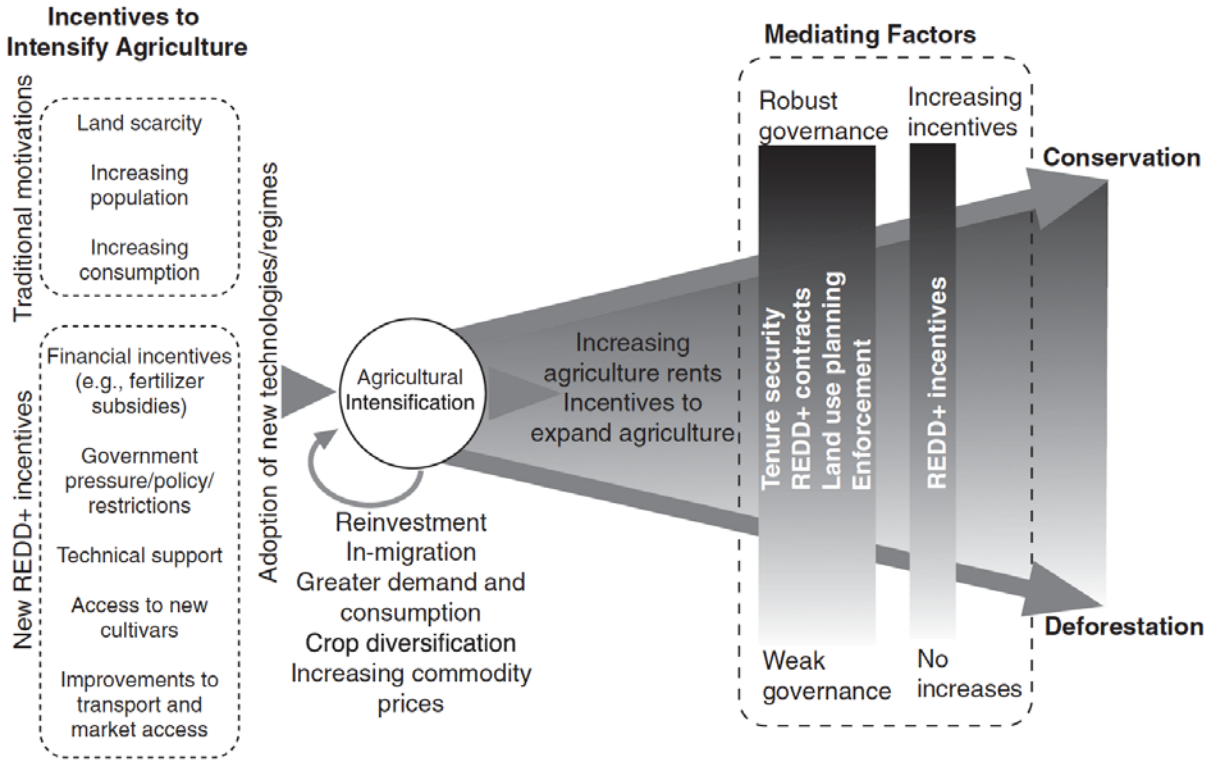
Local Land Use Plans prepared through a well-informed, participatory process are therefore proposed as a potential building block for implementation of REDD+ (Angelsen et al, 2009), zero deforestation commodity production, and sustainable and equitable rural development contributing to progress towards the Sustainable Development Goals.

Zero deforestation strategies are primarily founded on the concept that future supplies of an increasing demand for agricultural commodities will be met by increasing yields on existing farms, rather than expanding into forests – so called 'sustainable intensification' (Phalan et al., 2016, Matthews and De

Pinto, 2012). Sustainable intensification is one of the key innovations proposed in the Cameroon National REDD+ Strategy Options report (MINEPDED, 2017). Phelps et al., (2013) and Byerlee et al., (2014) point out that sustainable intensification alone can increase the profitability of improved production systems and accelerate deforestation (see Figure 1). To counter such negative feedback, they advocate the need for a) accompanying incentives to conserve forests and b) more robust *land governance*, i.e. a range of institutional factors including tenure security, coherent land use planning, policy harmonization, and enforcement.

However, many national governments struggle with multilevel challenges and have faced enforcement problems in the land use sector for decades (Corbera and Schroeder, 2011). Cameroon is not different in this regard.

Figure 1: Relationship between REDD+ policies, agricultural intensification, and deforestation.



Source: Phelps et al., 2013. **Note**: New REDD+ policies drive agricultural intensification, which increases future agricultural rents and incentivizes forest clearing for agricultural expansion. A number of feedbacks (e.g., reinvestment, in migration) create further incentives for expansion. Whether these result in deforestation or land sparing for conservation depends on two mediating factors (1): robust forest sector governance and (2) whether REDD+ payments match future agricultural rents. Macroeconomic contexts not depicted.

Haupt et al. (2017) found that despite a rapid increase in pledges and government efforts to reduce deforestation, no clear evidence exists that the various initiatives are having their intended impacts. They recommend that initiatives are needed at the jurisdictional or landscape level to provide opportunities to consolidate various supply-chain sustainability efforts and align company and government interests across different sectors. Jurisdictional approaches combine government efforts related to law enforcement, land-use planning, and smallholder extension with jurisdictional certification and private-sector sourcing commitments. Such programs are essential to detecting and managing leakage. Larger programs based on private-public cooperation also facilitate the exchange of data and harmonized implementation of incentive and smallholder inclusion programs. However, jurisdictional programs are complex and require long-term political commitment backed by a strong vision toward sustainability and supportive institutions.

With regard to implementing the commitments to zero deforestation cocoa (a key cash crop for local communities in South West Cameroon), Kroeger et al. (2017), Carodenuto et al. (2018), and *Carodenuto*, (*in press*), all highlight the need for coordination of both private investments to increase productivity and public investment in land use planning and law enforcement to ensure cocoa production does not expand into remaining forests. Further, given that investments in sustainable cocoa are long term, improved tenure security over land and trees is an important enabling condition for smallholders to invest in intensified production systems (Carodenuto, 2018 *in press*).

Using the Land Use Planning process to clarify and secure tenure

Land tenure in Cameroon is characterized by a legal duality between the modern regime governed by legal norms and the customary regime governed by norms of customary laws (Karsenty and Assembe, 2010). These two systems coexist and determine criteria for land distribution. This duality has various consequences, of which the most relevant here is that the superposition of legal regulations and arbitration mechanisms leads to confusion and land tenure insecurity.

Considering the limitations of effective and affordable land registration in Cameroon and the lack of a functioning, secure and trusted cadastre (Tchawa, 2014), land-use planning is increasingly being seen as a complementary tool for widening the scope of tenure security improvements (Chigbu et al., 2017). It can increase land tenure security and clarify customary land tenure of communal lands (Metternicht, 2017). Land-use planning, and tenure security interact: LUP can stimulate tenure security while tenure security can make LUP sustainable. Land Tenure security is also seen as necessary to enable successful

implementation of REDD+ but improvements in tenure alone will not ensure that REDD schemes benefit local people (Cotula and Mayers, 2009, Phelps et al., 2013).

2. Developing a Council Land Use and Sustainable Development Planning (LUP) methodology:

In 2016, The European Forest Institute (EFI) was mandated by MINEPAT (Ministerial Letter No. 003966/MINEPAT/SG/DGPAT/DATZF/CESA/AA of 6th September 2016) to develop and test a methodology and a set of tools to support council land use and sustainable development planning.

EFI contracted a multidisciplinary team to support MINEPAT to develop a well-informed, transparent and participatory land use planning methodology that identifies competing interests, helps stakeholders to compare the social, economic and environmental implications of different land use scenarios, and reach consensus on future land use (GIZ, 2012; Haub, 2009; Haub and Mujetenga, 2012). This requires the careful melding of participatory approaches that identify and engage stakeholders in a structured and well-facilitated dialogue, supported by technical approaches and tools, in a complementary mix of top down and bottom up processes.

- A **top down** process can help to explore how Cameroon's national policies and strategies could be achieved at the regional and local level. The method and accompanying set of tools allow a downward flow of information and guidance to participatory land use planning exercises at the council and village levels. This facilitates the formulation and objective comparison of realistic scenarios in spatial, socio-economic and environmental terms. Framing land use planning within the national context and programs is also more likely to result in resources being made available to support implementation of locally agreed plans for sustainable rural development. Planning at the regional scale also enables the cumulative impacts of future development on the natural capital of a region to be accounted for, and the sharing of responsibility for protection and management across a wider number of stakeholders (Metternicht, 2017).
- A **bottom up** process, built on participatory mapping and analysis of land and resource use patterns and customary rules, at the village and clan levels, is being developed and tested simultaneously by local NGO, Ajemalebu Self Help (AJESH), supported by Rainforest Foundation UK, an international NGO. These bottom up processes are oriented towards obtaining FPIC, promoting stronger local ownership for the resulting decisions about land use and

strengthening rights and collective tenure over forest and land. This approach facilitates upward flow of information towards regional and national processes informing decision-makers how national strategies and development targets can realistically be achieved on the ground. Since the 2011 Law did not foresee village level LUPs, they must be integrated within the council land use planning process to ensure that results are binding.

This two-way iterative process is anticipated to result in a compromise between both national and local ambitions, but should build much stronger consensus about how sustainable and equitable rural development can be implemented. Combined, the top down and bottom up approaches have a better chance to reconcile conservation and development objectives; protect biodiversity; prevent loss of ecosystem services; clarify customary land tenure; resolve land use conflicts; plan future land uses; and accelerate the transition from subsistence to market-oriented agriculture (Bourgoin, J, et al., 2012, and Bourgoin, et al., 2013). GIS/participatory mapping processes has contributed – positively, though not comprehensively – to good governance, by improving dialogue, redistributing resource access and control rights – though not always equitably – legitimizing and using local knowledge, exposing local stakeholders to geospatial analysis, and creating some actor empowerment through training (McCall and Minang, 2005).

Experience worldwide shows that no matter for what purpose land use planning is applied, the most crucial factors are awareness raising, public participation, capacity building, institutionalization, formal approval and a legally binding status (GIZ, 2012; Mefalopoulos, 2008; Prieto, 2012; Chigbu et al., 2017).

Nguti – A real case study to test the Land Use Planning Guidelines

Nguti Municipality in Cameroon's South West Region was selected in consultation with municipal, regional and national level stakeholders as the first testing ground for the Council LUP method, being a representative microcosm of land management challenges in the forested zone (see Box 2, Figure 2 and Figure 3). The development and testing of the land use planning guidelines is therefore guided by the experiences from Nguti. This paper uses some illustrations from the process in Nguti so far. Data collection and consultation have started, scenarios have been identified and analysed in a participatory process at village levels, led by local NGO, AJESH. However, the preparation of an actual Council Land Use Plan still lies ahead.

Box 2: Nguti – a microcosm of the competing interests in land

A large portion of Nguti's forested land was set aside for conservation during the era that Cameroon was under the British Protectorate (1922-1960). Land was gazetted as Forest Reserves (Nkwende Hills Forest Reserve – 647 ha; the Bakossi Mountains FR – 3,064 ha), and the Banyang Mbo Wildlife Sanctuary – 61,220 ha after extensive consultations with local communities – in fact they were initially established as "Native Authority" Reserves, under the colonial governance policy of "indirect rule" (Geschiere, 2011).

Since the 1990s, the German funded Programme for the Sustainable Management of Natural Resources (PSMNR) and its predecessor projects have brokered the creation of a Council Forest (a Permanent Forest designated for timber production – 11,792 ha, though the application is stuck in the administrative channels) and 4 Community Forests (Non-Permanent forest managed for timber exploitation and local extractive uses - 10,628 hectares). WWF also brokered the upgrading of the Bakossi Forest Reserve to a full National Park in 201X, and Banyang Mbo is in the process of being upgraded to a National Park -greatly restricting community access and user rights.

In 2009, the Ministry of Economy, Planning and Regional Development (MINEPAT) allocated the much-disputed and publicly debated agricultural concession (8,620ha) to Herakles Farms / SGSoc for Oil Palm production (add references).

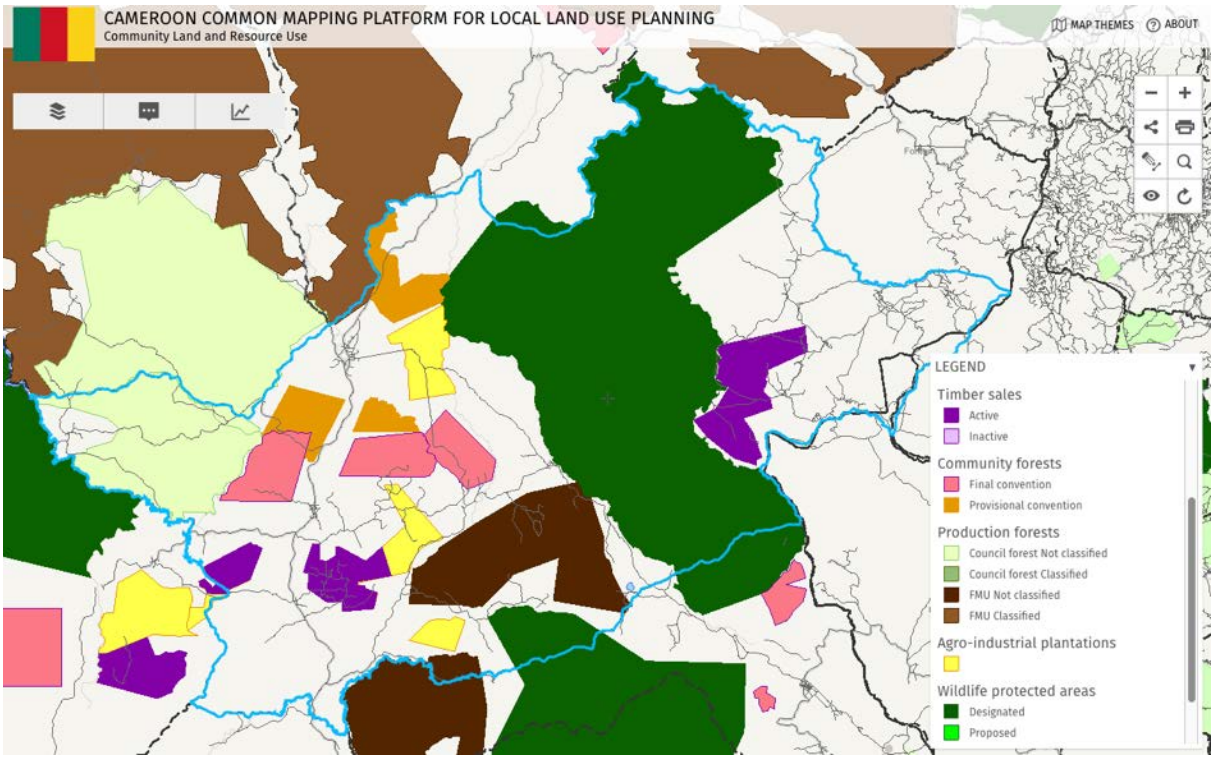
The Ministry of Forestry & Wildlife (MINFOF) has allocated a new Forest Concession (a Permanent forest designated for timber production – 12,186 ha) in 2013. In 2013 and 2017, MINFOF allocated 7 licenses for Sales of Standing Volume (maximum 2,500 ha, 3-year logging permits in the Non-Permanent Forest Estate, totalling 13,643 ha). These are temporary licenses that typically precede conversion of forest to agricultural land uses.

A newly tarred road through the centre of the municipality has greatly improved access to markets, and thus increased speculation of investors in land. Outsiders have bought, and are continuing to buy, land for food crop and cash crop production. Insecure tenure, and weak land governance are helping to accelerate this trend and have triggered conflicts between community members, their leaders and elite, and outsiders who have bought land. Though Cocoa markets have been volatile, improved access is encouraging expansion of cocoa plantations deep into the hinterlands – where other crops are not economically viable to grow and extract to market.

With a continuing growth in global demand for commodities, agricultural pressure on land, even in remote parts of rural Cameroon is also growing. In Nguti today, 65% of land is either already allocated to one or another land use or is being farmed by local communities – the remaining 35% is forest land that is used by the local communities for hunting and gathering and includes a number of sacred sites. However, it is not designated to any legal category of land or forest and is thus highly susceptible to external interests claiming it, through negotiations with government and/or local elites.

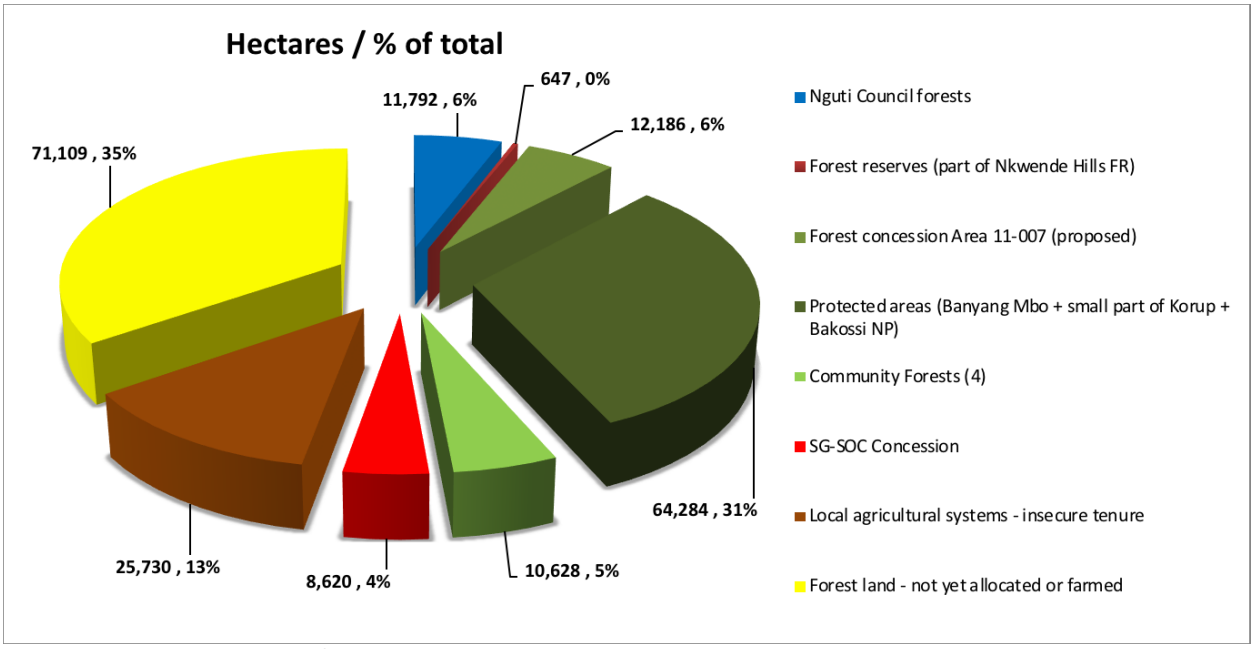
Land Use Planning therefore focuses attention on how to use the remaining 35% of Nguti's land - but some argue that it will need to revisit past or proposed land allocations.

Figure 2: Map of current land allocations in Nguti



Source: Common Mapping Platform (developed with technical support from WRI)

Figure 3: Pie chart of current land allocations in Nguti



Source: Figures extracted from GIS datasets, and summarised by authors.

Pitching Council Land Use Planning as the meeting point between a hierarchy of top down plans and bottom up approaches

With very limited guidance from Cameroon's current legal framework (there is just one article of the Law that defines Council Land Use Plans), the team has taken a participatory approach to developing the LUP methodology, drawing from a review of the international literature, learning from past land use planning efforts within Cameroon (e.g. World Bank, 2006 and 2012) and consulting with stakeholders about what they believe is appropriate in the Cameroon context. A key consideration is what decisions should, or should not, be taken at which level in the hierarchy of Land Use planning – i.e. in the National Schema, the Regional Schemas, the Council level local land use plans, and at village level. While councils are the lowest level of elected government, they do not have any mandate over rural land, outside of their urban headquarters. The Council LUP process must therefore bring together community representatives and traditional authorities at the village level with ministries with a mandate over rural land (Ministries of Agriculture / Livestock / Forestry / Lands / Environment / Economy / etc.) to discuss land use. The role of the Council during the LUP process is primarily that of facilitator and observer rather than decision-maker.

This requires building a consensus on how village and council level plans align with higher level land use plans, and the relative weight of top down and bottom up considerations, priorities and decision-making processes. Finding this consensus will be the essential outcome of this project.

***Principles** adopted to guide Participatory Land Use Planning in Cameroon*

In November 2017, all the national, regional and local stakeholders met to agree on a set of guiding principles and key steps of the Council LUP process (see Box 3).

Box 3: Guiding principles for Council Land Use Planning:

- Land Use Planning should promote **Equity, Justice and Gender equality**;
- Land Use Planning is conducted through **transparent and inclusive participation of all stakeholders** and takes into consideration languages for accessing information;
- Land Use Planning promotes **accountability: Clear roles and responsibilities of all stakeholders towards future land management**;
- Land use planning is a process leading to an **improvement in capacity building** (resource mobilization, implementation, monitoring and evaluation);
- Land Use Planning **aims at Sustainability**, balancing many objectives:
  - **Environmental** (addressing climate change, deforestation, pollution, degradation, and areas prone to geohazards)
  - **Economic** (productive resources, food security and job creation)
  - **Social** (equity of accessibility to health services, education, electricity and jobs)
- Land use planning is conducted in the **context of the rules of the national laws and regional laws** for LUP and in the national and regional context
- Land Use Planning shall **recognize and promote the securing of Customary land rights**
- Land Use Planning shall seek the **Free Prior Informed Consent (FPIC)** of all those affected by any decisions about future land use or land allocation
- Land Use Planning shall **respect and promote human rights**
- Land Use Planning will **compile and compare the costs and benefits with regard to competing investments**
- Land Use Planning will be **evidence based for decision making** (geospatial analysis, environmental analysis and local knowledge)

Components of the Council Land Use and Sustainable Development Planning methodology

Methods and tools being developed by the team include:

- **A participatory multi-stakeholder process**
- **A set of protocols for data collection** (Acworth et al., 2018)
- **A data sharing platform** (Acworth et al., 2018)

- **A population and consumption-based model** (Pirker et al., 2018)
- **A scenario analysis tool** – Land Use Planner (Douard et al., 2018)
- **A Communication Strategy**

Participatory multi-stakeholder process

Land Use Planning involves multiple stakeholders, from the national, to the regional and local levels. Stakeholders at each level have different interests and roles, as summarised in Table 1. They will not agree on all options for future land use. The planning process must therefore be facilitated and ensure that the consequences of the different options on the different stakeholders are properly explored and a fair and equitable compromise is reached. This requires simplifying complex analyses into visually simple and information to ensure that the trade-offs are transparent and accepted.

Table 1: Roles in land use planning

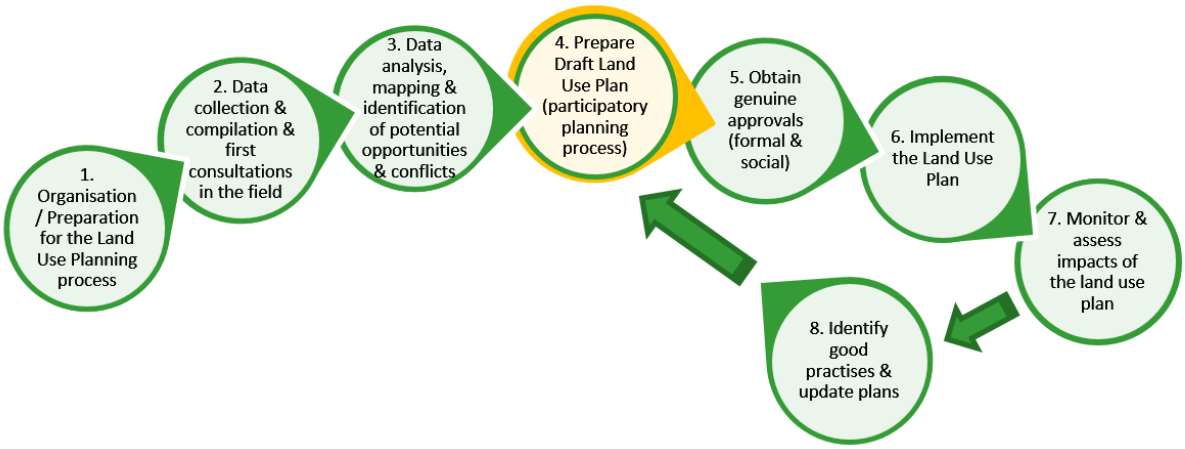
National agencies	**Local / Regional authorities**	**Individuals, groups and companies**
Set national priorities and objectives: ● National security ● Economic development ● Control of resources	Promote national priorities Enforce national laws Represent local wishes	Use resources, own land, invest (or not)
Power to act is limited by legal and executive capabilities	Have power to encourage, prevent and intervene but limited by laws, customs, etc.	Use constrained by local and national laws Economic options constrained by infrastructure, markets and land suitability

Source: Developed by the team

The process involves a multi-step, iterative set of tasks that include preparation, mapping, biophysical and socioeconomic data collection, analysis, identification of problem and solutions, setting of objectives and strategies, clarification of tenure and rights, and projection of current trends into the future.

The main steps of the Council LUP process have been provisionally agreed during a participatory exercise with representatives of different ministries, the local council, representatives of traditional chiefs and local NGOs.

Figure 4: Stages in Land Use Planning Process (draft)



Each of these broad stages consists of many smaller steps, the detail of which is still being developed for approval, being based on a review of experiences elsewhere. These steps outline an iterative process between higher level analyses, and local level consultations and aim to find a land use scenario that is an acceptable compromise between local interests and national planning priorities, within a framework of global, and national markets and policies which drive land use.

A set of protocols for data collection to identify constraints and opportunities at the local level

A wide range of data is needed to inform the Land Use Planning process – first to determine the current land cover and land uses, then to estimate future land demands and decide where best to allocate land to different purposes to meet objectives.

Current and future land use are constrained by a number of factors:

a) historical land designations (Protected Areas, Concessions),
b) geophysical factors (slope, soil, water availability, climate) which influence crop suitability;
c) environmental protection considerations* (watersheds for village drinking water, biodiversity, high carbon stocks)
d) social considerations* (areas important for the practice of socio-cultural activities such as traditional hunting, gathering; sacred sites; etc,)

e) cost of transport to market (a function of distance and quality of roads between source and point of sale) which renders many poorly accessible rural areas of commercially non-viable for lower value crops.

*projects larger than 50ha require an Environmental & Social Impact Assessment;

At the start of the project, data for most of these factors did not exist, so we set out to develop a set of protocols for compiling new data layers where stakeholders indicated they were needed. Our approach has been to:

- assess and agree what information is needed at the local, regional and national levels with the relevant stakeholders;
- identify and engage the institutions and experts best placed to design and test the data collection protocols where possible, training local data collectors to collect data;
- test the usefulness of the resulting dataset to inform the Land Use Planning process by presenting to stakeholders for feedback, where necessary, refining the protocol.
- complete the data collection and analysis and share the resulting data or map layer.

This has paid dividends – errors identified at the fine local scale have guided correction of the protocols, before substantial investment in collecting and analyzing large datasets, or trying to use them. Protocols that have proven to work at the local level can then be used to generate useful data at the wider scale.

The resulting protocols and datasets are presented at this conference by Acworth et al., (2018), and include:

- Transport cost mapping – cost of transporting agricultural goods to their respective markets
- Land cover mapping – current land cover and use (forest, plantation, open farmland, agroforest)
- Harmonised participatory mapping – community land and resource use and sites of cultural importance, developed by RFUK and the Tenure Facility;
- Population estimates: from household surveys and estimates of population trends;
- Mapping of existing land allocations: based on records made available by relevant Ministries (MINFOF, MINDCAF, Classification documents) and village level records (customary land allocations);
- Terrain and Soil mapping – using Simple Soil Survey method (BGR)
- Botanical Biodiversity – using Rapid Botanical Surveys (Dept of Plant Sciences, Oxford)

- Wildlife corridors: based on methodology prepared by MINFOF Programme for the Sustainable Management of Natural Resources (PSMNR)
- Crop suitability (Oil Palm, Pirker et al., 2016) and Cocoa (Läderach et al., 2013) -

All these factors must also be taken into account during planning and may constrain some land uses. For example, not all non-designated forest land is suitable for agriculture in general or for a specific crop. So identification and prioritisation of suitable areas for domestic food crop production is essential for long term food security. But some of Cameroon's best agricultural land in the most accessible locations has historically been allocated to the production of high value export crops, while the production of lower value food crops for the domestic market is forced onto less suitable land, and/or further from the markets – inflating domestic food prices and fuelling conflict between local communities and agro-industrial operators. The agricultural potential of remote areas cannot be realised without costly investment in infrastructure. A top priority of most rural communities is thus road construction, to dis-enclave them and connect them to markets. Planning of rural roads must therefore feature in the land use plan.

A Data Sharing platform – The Cameroon Common Mapping Platform

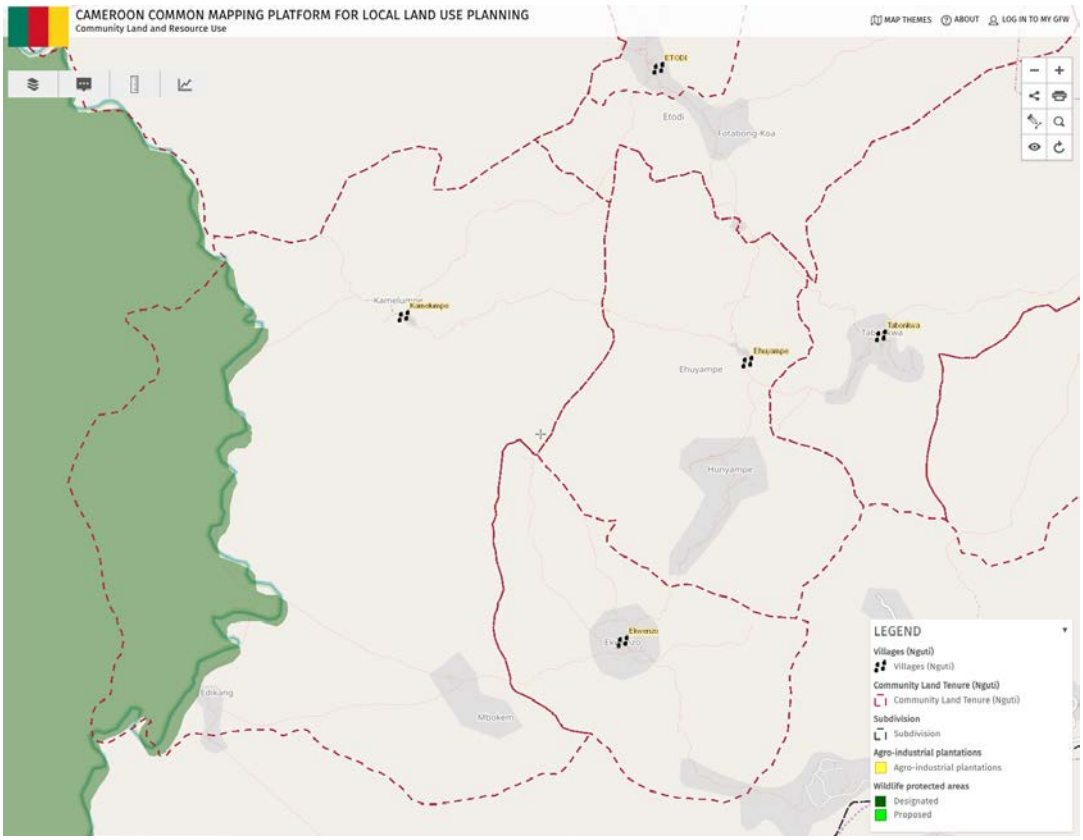
Geospatial Information needed for Land-Use Planning is generated and held by dozens of different entities (communities, ministries, satellites, research institutes, etc.). This was the rationale behind EFI's initial interest to commission the development of a Common Mapping Platform, where data from multiple sources could be shared with the public and guide decision-making in a visually explicit manner.

The integration of these many map layers and spatial datasets into a comprehensive web-platform allows many users to access explore the data. The Platform is built on WRI's MapBuilder technology (Maschler and Strong, 2016), which allows users to customize the Global Forest Watch online maps add their own data layers to meet their own needs. MapBuilder makes use of many layers already compiled under the Forest Atlas project and Global Forest Watch (GFW).

Where data is not already public, there is still a need to develop and negotiate data sharing protocols to define the ownership rights of data and define the necessary safeguards to ensure that they will be used appropriately – especially data from participatory mapping exercises, which include information on land and resource use patterns, and customary village boundaries that are not yet recognised by the State.

More detail on these data protocols, the resulting data sets, the design, functionalities and future development of the Common Mapping platform are presented by Acworth et al., (2018).

Figure 5: Detail of Village Boundary Maps



A population and consumption-based model

Projecting land use into the future depends on good estimates of growth in population, and associated changes in patterns of consumption. These dictate the levels of crop and livestock production, and the land needed to grow them to meet local, national, regional and global market demand.

The GLOBIOM model (IIASA, 2017) had already been adapted and calibrated to analyse drivers of deforestation at the regional level (Mosnier et al., 2012) and national level in Cameroon (Mosnier et al, 2016 and Republic of Cameroon, 2017) and by agro-ecological zone (MINEPDED, 2017b). The team engaged IIASA experts to adapt the GLOBIOM models to estimate future demand for land to the sub-national and local scales (Pirker et al., 2018). However, better estimates of current farm sizes and yields in complex multi-cropping farming systems are needed. The team has reached out to IITA, CIRAD and the Cameroon national agricultural research institute (IRAD) to compile better baseline data on farming systems from existing research or new field research where existing data is not available. The study area

is particularly poorly covered by soil information to guide crop suitability mapping – a new simple soil survey protocol is currently being prepared by the BGR (Bundesanstallt für Geowissenschaften und Rohstoffe) in Germany. Fieldwork scheduled during the next stage of participatory land use planning process will help to fill gaps in knowledge about both quantitative and qualitative aspects of farming systems.

The team has researched a number of existing platforms that may help with consistent, georeferenced and efficient field data collection, such as Open Foris (FAO, 2014), SEPAL (FAO, 2017), OpenDataKit (ODK) (2018), KoboTools (2018) among others. These tools facilitate synchronized Remote Sensing, field inventory, data analysis and reporting.

The likely impacts of climate change, declining fertility with reduced fallow duration, and the impact of agricultural innovations (such as using better genetic material, growing methods and agrochemical inputs) are also needed to inform projection models but information is thin on the ground.

Promotion of zero deforestation cocoa, and other commodities depends on a much better mastery of both the costs and likely benefits of supporting different farming systems and technologies, as well as the costs of land governance.

Building and Comparing Scenarios – contrasting visions with very different results

The first step in the participatory analysis process is to identify three or four realistic land use scenarios for a given area of interest – in the case of municipal level planning we took the entire Municipality of Nguti. The approach taken was to ask different stakeholder groups to envisage real but contrasting visions of the future. For example, participants at multi-stakeholder meetings in the field were divided into like-minded groups of proponents of: small scale agricultural development; large scale commercial plantation development; and conservation and reduced deforestation. Each group was invited to allocate the available land in different ways that allowed them to achieve their goals. They were given the freedom to change factors such as the number of hectares of food crop farms, cocoa, oil palm, etc. per household; the duration of fallows; and the extent of land retained as community forest, or allocated for conservation, commercial logging, external investors etc. This was done first using a simple excel sheet to allocate all the available land – without initially worrying about where these land uses would be practiced in physical space. The only rule was that they could not allocate more land than is physically available in Nguti. The results showed that many of scenarios quickly filled the remaining space that has not already been allocated to one or another legal category of land allocation. This expansion comes at the expense of

forest, and once the non-allocated space is filled, farmers are likely to move rapidly into protected areas, forest concessions, and their own community forests – as has been widely witnessed across more populated areas of Cameroon and other West African countries.

Table 2. Land Use Scenarios – the present situation and 2 contrasting visions of the future

		Today		Scenario 1		Scenario 2
				Expand cocoa and food crop production		Oil palm Boom - SGSoc Outgrowers Scheme
		In 2017		In 2050		In 2050
POPULATION	Population estimate	19,641				
	Population Growth Rate	2.5%		2.5%		2.5%
	Population by 2050			46,612		46,612
	Nguti (Total area)	204,996		204,996		204,996
	Persons per household	5		5		5
	Number of Households in Nguti	3,928		9,322		9,322
FARMLAND per household	Food crops (not fallow)	1.00		2.00		1.00
	Cocoa and palm agroforest	2.00		4.00		5.00
	Coffee and palm	1.00		1.00		1.00
	Fuelwood / bamboo plantation per household	-		0.10		0.10
FALLOW per household	Fallow duration factor for food crop farms (total cycle duration / years of production)	2.50		2.00		2.00
	Fallow land regenerating fertility per household	2.50		4.00		2.00
TOTAL	Total land cultivated (& held under fallow) per household	9.00		13.10		11.10
TOTAL AREA FARMED BY HOUSEHOLDS	Food crops (active, not fallow)	3,928		18,645		9,322
	Cocoa and palm	7,856		37,290		46,612
	Coffee and palm	3,928		9,322		9,322
	Fuelwood plantation	-		932		932
	Residential area	196		466		466
	Fallow land regenerating fertility	9,821		37,290		18,645
TOTAL	TOTAL Area actually farmed by Community in Nguti	25,730		103,945		85,300
OUTSIDERS' FARMS	Area of Industrial Oil Palm developed (SGSoc)	800		8,620		8,620
	Area of smallholder / medium Oil Palm plantations (sold to non-indigenes)	500		1,000		10,000
TOTAL	TOTAL Area of Farmland owned / farmed by outsiders	1,300		9,620		18,620
		Today		Projected 2050		Projected 2050
Total Area farmed by community AND OUTSIDERS		27,030		113,565		103,920
Remaining forested land		177,966		91,431		101,076
Allocated forest land	Nguti Council forests	11,792		11,792		11,792
	Forest reserves (part of Nkwende Hills FR)	647		647		647
	Forest concession Area 11-007 (proposed)	12,186		12,186		12,186
	Protected areas (Banyang Mbo + small part of Korup + Bakossi NP)	64,284		64,284		64,284
	Community Forests (4)	13,088		13,088		10,628
	Unplanted SG-SOC land	7,820		-		-
	Total land allocated as forest	109,817		101,997		99,537
TOTAL	Net land allocated	109,817		101,997		99,537
Projected total land requirement (farming and forest uses)		136,847		215,562		203,457
Nguti (Total area)		204,996		204,996		204,996
Remaining land		68,149		(10,566)		1,539

Source: developed and tested during council level meetings in Nguti by the EFI funded team.
Note: In Scenario 1 land demand exceeds the available land – i.e. food crops will likely expand into one of the three types of forest highlighted in yellow (Forest Concessions, Protected area or Community Forests). A compromise will need to be made between area allocated to food production and forest management.

The process of building scenarios that allocates limited land resources has helped the stakeholders to acknowledge that not all ambitions of all stakeholders can be met within the limited space and that they need to reconsider their priorities and choose between options. This has proved to be a valuable mechanism for identifying the important current and future factors driving land use, deforestation and conflicts over access to limited land, and to open a multi-stakeholder dialogue about land use options.

The same scenario building approach is used at the village and clan level during bottom up planning – but it makes sense to run the analyses for the whole municipality to see the broad patterns and agree on what scenarios are worth exploring at the local level, before launching into discussions about options that cannot be reconciled at the higher level. The bottom up component of the LUP exercises can ensure that solutions in land use change are problem-oriented and linked with specific community development objectives and thus policy-oriented.

Choosing between two land uses when they compete for the same piece of land

The scenario builders show that decisions need to be made between competing land uses. A participatory exercise conducted with stakeholders asked them to prioritise competing land uses in a theoretical gameplay – a proxy for societal preferences. Some land functions are compatible (watershed protection, biodiversity conservation, sustainable hunting and gathering by e.g. indigenous people) and both functions can co-exist on the same land, while other functions are not compatible (agroindustry and local agriculture) and a decision needs to be made regarding which to prioritise.

Table 3: Results of a theoretical gameplay to prioritize land uses where they compete for the same space

Land is technically and economically suitable for….	Food crops to feed the nation (food security)	Smallholder cash crops (domestic market) e.g oil palm	Smallholder cash crops (export market) e.g. cocoa, coffee, cotton, rubber, oil palm,	Large scale plantations to supply domestic market	Large scale plantations (foreign investor) to supply export market	High Biodiversity Forest (Not yet protected)	High Biodiversity Forest (Already protected)	Commercial Forest exploitation in UFA	Watershed protection	Urban and infrastructure expansion	Mining / Oil and Gas	Indigenous People's Customary land
Food crops to feed the nation		=	←	←	←	↑	↑	←	↑	=	↑	↑
Smallholder cash crops (domestic market) e.g. oil palm			←	←	←	↑	↑	←	↑	=	↑	↑
Smallholder cash crops (export market)				←	←	↑	↑	??	↑	↑	↑	↑
Large scale plantations to supply domestic market					←	??	↑	←	↑	↑	↑	↑
Large scale plantations to supply export market						??	↑	↑	↑	↑	↑	↑
High Biodiversity Forest (not yet protected)							↑	=	✓	↑	↑	✓
High Biodiversity Forest (Already protected)								←	✓	←	←	= ✓
Commercial Forest exploitation									↑	↑	↑	= ✓
Watershed protection										←	↑	= ✓
Urban and infrastructure expansion											↑	↑
Mining / Oil and Gas												←
Indigenous People's Customary land												

←	Land use to the left is the priority land use
↑	Land use above is the priority land use
=	Both land uses are equal priorities – we will need to agree which to select
✓	Compatible
??	Not clear or not agreed – needs more study

Source: Project National Stakeholder Workshop, Yaoundé, November 2017

The exercise illustrated that in many cases, the societal choice can be made easily, with no need for economic or other detailed analysis – for example stakeholders always opted to *protect a watershed* over all other land uses. *Mining / Oil and Gas* always trumped other uses except "*already existing Protected Areas*". *"Local food crop farming to feed the nation"*, and "*local cash crop production"* were always prioritised over *large scale plantations* (whether to supply domestic or export markets).

The land allocation process should therefore start by identifying and earmarking all land that is needed to meet priorities (watershed protection, local food crop production). Once this is done, only if there is additional land available and suitable should e.g. large-scale plantation agriculture be considered.

From the gameplay, there were in fact very few situations where the societal choice between two options was not clear and there would be need for more detailed comparative analysis, for example between "*commercial forest concession*" or "*protection of (as yet unprotected) high biodiversity areas*"; or between "*urbanisation*" and "*local food crop farm*". This suggests that in most cases the decision making about land use preferences does not need heavy or complex analysis. In only a few cases is there need for more in-depth social, economic and environmental analyses.

This gameplay method will be used during the participatory process, to help communities prioritise land uses and identify areas where more difficult choices need to be made, and additional data may be required.

Land Use Planner *- visualizing trade-offs under different land use scenarios in social, environmental and economic terms using "Land Use Planner"*

The range of future land use options risks becoming bewildering, as each land use scenario generates different types of direct benefits (income, employment, food security) and indirect benefits (biodiversity conservation, avoided carbon emissions, watershed protection). Opportunity costs and externalities are also quite different under competing scenarios. Both the costs and the benefits are not shared equally between stakeholders.

To help inform the diverse stakeholders to reach a consensus around a future land use, it is essential to translate this complexity into easily understandable summary figures, graphics and stories that make sense to diverse interest groups, many who have very limited formal education. Agreements will inevitably be a trade-off between the preferences of different stakeholder groups.

To understand the implications of different scenarios EFI has developed the Land Use Planner (http://landuseplanner.org, Douard et al., 2018) to simplify the economic analysis of multiple scenarios.

Some scenarios may appear superior, or inferior in terms of gross net benefits, but the distribution of benefits under different scenarios tend favours or disfavours a particular stakeholder-group. Understanding these trade-offs and helping stakeholders to select scenarios that optimise local benefits while also achieving national and global policy objectives therefore lies at the core of the land use planning process.

Using visual tools *during the participatory land use planning process*

During the participatory land use planning process, a combination of spatial data (maps printed from the Online Portal, and on desktop GIS) that integrate participatory maps and other data layers will be used to present the options in visual spatial format. Infographics from the Land Use Planner (on and offline versions available) will be used to illustrate the costs and benefits of different options for different stakeholder groups.

These visual tools are considered to serve as essential means of communicating complex information to guide the collective decision making of stakeholders at the Council level and the village or clan level.

A Communication Strategy

Communication is essential throughout the process to ensure that the FPIC of communities has been obtained and maintained, and periodic validation of the process and resulting plans by all stakeholders results in legitimization of the final agreements and land use plan.

A strategy has been developed that identifies all stakeholders, their respective influence, and how they communicate with each other. A theory of change (Vogel, 2011 and 2012; HIVOS, 2015) has been developed that describes how we can harness key stakeholders and interests to support the adoption of the land use planning methodology, and the anticipated impacts of the resulting land use plans . Communication products, tools and activities aim to support seamless flow of information vertically between geopolitical levels and horizontally between sectors and stakeholders. The goal is to secure political and social buy-in to the land use planning guidelines, the process and its outcome.

3. Remaining challenges

The development of the Land Use Planning guidelines is on-going, with some delays due to political unrest insecurity in the pilot area. As we move into the next phase of work, the following issues will need to be addressed

- **Sensitivity of models to input data and assumptions:** The models of future land use are highly sensitive to the data inputs, particularly on the area, productivity and profitability of different farming systems. More accurate data will be collected in the forthcoming phase of work;
- **Difficulty to determine who is mandated to make the final decision on land** when Government does not yet accept local communities' customary claims on land and communities contest the decisions taken by government. This underpins the need to define the key role of communities in a negotiated land use planning process and ensure that all government departments with powers to allocate land then respect and uphold the outcomes.
- **Limited understanding of stakeholders** of some of the complex global and national policy context – especially as they relate to global concerns about reducing deforestation, and
- **Lack of clear incentives to pursue low deforestation development pathways** before key issues such as land tenure, ownership of carbon rights, and the availability and sharing of performance related payments are resolved. how to translate this at local level.
- **Limited availability of high quality facilitation and technical skills** – which are both needed during a data driven participatory land use planning process. They are not yet familiar with some of the new GIS and economic analysis tools and how to use them at the local level
- **Balancing participatory with technological approaches** – local participation is essential but needs careful guidance to avoid the diversion of LUP process into a wish list for immediate urban development and social infrastructure. rather than long-term rural land use.
- **Coordination of multiple partners** - Due to the scale of the data compilation and consultation required, the project is reliant on additional partners and financial resources. However, differences in timing of the partners and projects has made the timely integration of the top-down and bottom-up processes challenging.

4. Conclusions

The emerging council LUP methodology proposes a complex mix of participatory processes, technocratic tools, communication and negotiations towards agreements on the future direction of rural development, informed by global and national policies and mechanisms. Integrating the logic of the international agenda into local planning is becoming essential to trigger new funding opportunities (for example for rural development and REDD+).

To succeed, such council land use plans must describe not only the future allocation of land, but also: clarify land and tree tenure; establish new land and resource governance institutions and mechanisms that address historical deficiencies (on the side of both the state and traditional authorities); describe the necessary investments to intensify agricultural production; define performance-based incentives for forest conservation, and sustainable commodity production; and if REDD+ options are adopted, it will need to identify and secure the rights of legitimate recipients of future REDD+ payments.

A land use plan that aims to deliver on all these goals is ambitious indeed. The preceding analysis makes it clear that without such ambition, many of the global commitments to meeting the SDGs, eliminating deforestation from commodity supply chains, and tackling climate change will not be met.

Such complexity appears necessary to address the multiple land use and land governance challenges faced in rural Cameroon and harness new opportunities. Land Use Planning should be presented as a unifying process that allows many objectives to be achieved simultaneously. If tackled separately, these initiatives might well be counter-productive, and will certainly be even more confusing to local communities.

But the complexity also increases the risk of failure: both during the preparation of such a plan, and during its implementation. A plan that integrates all these factors will likely not evolve out of a bottom up approach alone. The diverse stakeholders will need to be convened regularly, will require careful guidance to understand the policy framework, new opportunities (for zero deforestation commodities, payments for environmental services, REDD+ mechanisms etc.) and expert facilitation, supported by technical tools to reach a consensus on the sustainable development of the municipality. There are no obvious shortcuts that will deliver a better result.

The process of constructing the Council LUP method is compelling stakeholders to clarify how council land use planning fits within the vertical hierarchy of national, regional and council LUP approaches envisaged by Cameroon's 2011 LUP law, and emerging initiatives to address deforestation, while also

respecting the principles of participation and FPIC. It can also promote inclusion of village level plans and adoption of community-based development plans and action plans in higher level plans. If successful, the process can be proposed as a model for MINEPAT to replicate.

Each of the interactive levels will have their specific modes of planning and negotiation results. But the data collection protocols, the data layers, the common mapping platform, the a population and consumption-based model, and the land use planner tools are all being designed to serve data collection, a analysis and results sharing at all levels. supporting the transparent, integrated, inclusive and responsive land use planning and development. Preliminary results will illustrate the efficacy and outputs from the methodology and tools.

MINEPAT must secure the buy in of the other rural sector Ministries (MINFOF, MINADER, MINEPIA, MINEPDED, MINIMIDT, MINDCAF), and their collective adherence to the agreements reached at the local level. The imposition of e.g. a new agricultural or forest concession or protected area that is not the outcome of a consensus that it contributes to local development, will likely undermine commitment to such a plan, and exacerbate conflicts over land and resource access, which are already boiling in the South West Region, and the municipality.

The continued engagement of traditional authorities, representatives of women, the youth, local and national government will reduce the chance of obstruction of the validation process by external lobbies or special interest groups.

This case study is one of the first pioneer concrete case from which we can draw lessons to ameliorate Land Use Planning.

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