



Green Climate Fund Project

“Enabling Implementation of Forest Sector Reform in Georgia to Reduce GHG Emissions from Forest Degradation”

Appendix 7 to the Feasibility Study – Private Sector Study

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Client

GIZ

Authors

Paul Borsy

Dr. Axel Weinreich

Gulbahar Abdurasulova

Dr. Giorgi Kavtaradze

Laura Kiff

Goga Baghaturia

Date: 19.07.2019

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LIST OF ABBREVIATIONS

ACC	Annual allowable cut
DES	Department of Environmental Supervision
IE	Individual Entrepreneur
JSC	Join-stock company
LTD	Private Entrepreneur
NFA	National Forest Agency
NTFP	Non-timber forest products
SFF	State Forest Fund
SP	Service providers

1 BACKGROUND

The Government of Georgia opened the legal opportunity for private sector involvement in the forest sector through the National Forest Code (adopted on June 22, 1999). This code changed the former Soviet management policy, which was in place until 1999. During that time, the forest administrative body was carrying out all management functions like timber production, forest supervision and economic functions. With the 1999 Forest Code economic functions (mainly timber production) were entrusted to the private sector while management remained under the government forest authority. The Forest Management Authority (State Forestry Department) issued timber and fuelwood licenses or permits for up to 1 year.

In the next phase of the forest reform (2005-2006) the strategic priority of the Forest Policy was to transferring more forest management responsibilities to the private sector. Through a new law adopted in 2005, the private sector could obtain a general license of forest use, which includes a special license for timber production, hunting and a license for export of cones of Caucasian fir and snowdrop (*Galanthus woronowii*) bulbs and/or cyclamen (*Cyclamen colchicum*) tubers.

In the period of 2006-2012, up to 70 forest licenses for long-term forest use (concessions) were issued with a total area of 166,654 hectares. With this new regulation new private sector service providers for forest management (concessions), timber harvesting, and transport were established. Other service providers for fuelwood production are active in Georgia, although their employment is considered informal (see Feasibility Study Chapter 5.1.3 on the 'Social Wood Program' for more detailed information). Due to various reasons (lack of sufficient state benefits, environmental degradation and damage, among others described in Feasibility Study Chapter 5.1.3.4.2), the concession system will be phased out by 2028 – and no new licenses have been approved since 2012.

While there is some uncertainty about the new role of the private sector under the New (draft) Forest Code and ongoing reforms in Georgia, there is substantial potential for private sector companies to develop their businesses, and build up capacities on ecosystem-based forest management and SFM. Commercial timber harvesting will thus transition from private sector licenses/ concessions to a new system where commercial timber is sustainably managed, harvested and sold by NFA. Nonetheless, NFA still envisions that private sector contractors will play a central role due to their experience and capacities within the sector - implementing around 70% of management activities, especially related to low-impact cutting operations, transportation, and the construction of low impact and resilient forest infrastructure (e.g. forest access roads and skidding trails – see Chapter 5.2.3.4 in the Feasibility Study for more detailed information). Nonetheless, the New (draft) Forest Code has a strong emphasis on implementing sustainable forest management, and current practices, equipment and capacities are considered insufficient to support this transition (see Chapter 5.1 and 5.2 of the Feasibility Study).

Objective of the private sector assessment

This report aims to provide insight into private sector service providers and contractors in Georgia's forest sector, including an overview of key players, and understanding what are the key opportunities and barriers for them within the forest sector. It will inform the development of a

proposal for the Green Climate Fund on *“Enabling Implementation of the Forest Sector Reform in Georgia to Reduce GHG Emissions from Forest Degradation.”*

2 DESCRIPTION OF SERVICE PROVIDERS

The following sub-chapters will provide an overview of the following main groups of private sector service providers in Georgia:

1. Forest use license holders and associated service providers
2. Service providers (e.g. felling, transporting, planting)
3. Timber industry
4. Actors involved in fuelwood value chains
5. License holders of non-timber forest products (NTFPs)
6. Service providers for inventory and planning
7. Banks and credit institutions (with specific forest related credit lines).

2.1 Forest use license holders and associated service providers

As mentioned above, issuing of licenses for long-term forest use began in 2006. Since then, private sector invested in the sector. In total, 70 licenses were issued until 2012 with a total area of 166,654 ha. The number however gradually decreased due to violations of regulations from 70 in 2012 to 38 in 2015.

Since 2013, the practice of issuing new licenses was suspended, since this form of management has not provided sustainable management of forests, but rather “exploitation management”. Currently, NFA is seeking for closing all private license holders when license periods ends. NFA is now interested in in establishing a more state controlled private service provider model.

State audit office noted that the arisen problems are not only due to the wrong (unsustainable) management of forests by the license holder, but also due to imperfect legislation that did not envisage the principles of sustainable management of forests and the issue of law enforcement itself. The state failed to provide the necessary monitoring and controlling. *An effective implementation of state monitoring and control (supervision) practically did not exist. Unfortunately, problems in this regard still exist¹.*

The unsustainable forest management is based on the following weaknesses:

- Licenses without inventory - Timber resource, quantity and quality was only estimated without carrying out a proper inventory
 - The license owner was obliged to carry out the inventory within a year after receiving the license; but in fact the inventory was never carried out since it implied high investments. In 2009, the obligation of carrying out an inventory was suspended. The only obligation was to establish a management plan without inventory data.

¹ See more information -Performance Audit of Forest Commercial Recourse Management, State Audit Office of Georgia, #6/36, 2016, Tbilisi, Georgia <https://sao.ge/files/auditi/auditis-angarishebi/2016/Commercial-Forest.pdf>.

- The licensee was obliged to prepare a forest management plan and submit it to the Ministry for approval as a prerequisite of producing timber. However, a management plan without a proper inventory does not comply with sustainable management principles.
- Overestimated timber volume
 - In some cases timber volume was overestimated
 - Overestimated timber volumes resulted in cutting more timber than permitted in the management plan to obtain the expected volume.
- Unspecified terms of the license
 - The rights and obligations of the license holder have not been clearly defined.
- Insufficient resources and competence of supervision authority (DES) for the purpose of qualified control
 - The law enforcement and the supervisory authority lacked the necessary qualification.

2.1.1 Licenses in the project regions

In the three project regions there are 10 operating licenses. From these 10 licenses, 4 licenses are in Kakheti region, 5 in Mtskheta-Mtianeti and one in Guria region. One license in Kakheti, covering an area of 5,945 ha, was revoked in 2019 due to non-compliance with their license terms. Active licenses cover 40,540 ha, with 2 licenses covering 1,074 ha set to expire in 2020. The remaining licenses are valid until 2027 or 2028.

The **10 active licenses in the project area are owned by 6 companies (Table 1)**. Most of the licenses are owned by Georgian Wood and Industrial Development Co. Ltd, which owns 3 operating licenses. The company also owns a license in Imereti region. Out of the 6 license holders, Georgian Wood and Industrial Development Co. Ltd is the only foreign investment (China).

Table 1: License holders in project regions

#	Region	Area (ha)	Annual allowable cut (m ³)	License holder	License number	License period	Current situation
Mtskheta-Mtianeti							
1	Quarters (29,31,37) of Tianeti Forest District of Mtskheta-Mtianeti Regional Forest Division	485	521	Ltd "M. House	1000044	13.03.14 - 16.10.28	Active
2	Quarter (34,35,36) of Tianeti Forest District of Mtskheta-Mtianeti Regional Forest Division	366	500	Ltd "Rashi"	1000045	13.03.14 - 16.10.28	Active

#	Region	Area (ha)	Annual allowable cut (m³)	License holder	License number	License period	Current situation
3	Quarter (39,42-48) of Sioni Forestry of Tianeti Forest District of Mtskheta-Mtianeti Regional Forest Division	790	4,322 (Fagus) ² 117 (Carpinus)	LTD "Mes-kheti 2011"	1000049	04.11.09 03.11.19	Active
4	Quarter (1-5,13-16) of Magharoskari Forestry of Dusheti Forest District of Mtskheta-Mtianeti Regional Forest Division	1,575	4,268 (Fagus)	LTD "Mes-kheti 2011"	1000051	04.11.09 14.11.19	Active
5	Quarters ((№97-99,106-109,112,113,119,120,125,65-68,73-74,92-96,103-105,117-118,124,126,127) of Artaani and Quarters of Akhalsopeli (№1-26,29-31,32-34,37-45,50,58,59) Forestry of Tianeti Forest District of Mtskheta-Mtianeti Regional Forest Division	7,687	9,080	Georgian Wood and Industrial Development Co. Ltd".	1000041 (100056 Duplicate)	09.10.08 10.10.28	Active
Kakheti							
1	Quarters (№17,18,23,24,30-34,36-42,44-51) of Akhmeta , Quarters (№1-6,13-16,24-27) of Borchorma Forestries of Akhmeta and Tianeti Forest Districts of Kakheti Regional Forest Division	5,945	6,431	Georgian Wood and Industrial Development Co. Ltd".	1000040 (100005 Duplicate)	09.10.08 10.10.28	Revoked (2019) (part of this License is in Mtskheta-Mtianeti region and another part is in Kakheti region)

² This figure could not be confirmed.

#	Region	Area (ha)	Annual allowable cut (m³)	License holder	License number	License period	Current situation
2	Quarter №24 of Kistauri Forestry of Akhmeta Forest District of Kakheti Regional Forest Division	284	320 (Fagus)	Natural Person Ramaz Lepsveridze	1000047	19.05.15 15.07.20	Active
3	Akhalsopeli, Kvareli, Shilda, Sabue and Gremi Forestries of Kvareli Forest District of Kakheti Regional Forest Division	9,423	7,500 (Fagus)	LTD "Georgian Group"	100058	19.03.12 03.05.27	Active
4	Quarters (№36-39,45-93,96-98,102-104,108) of Ilto Forestry of Akhmeta Forest District of Kakheti Regional Forest Division	9,484	10,078	Georgian Wood and Industrial Development Co. Ltd".	1000038 (100003 Duplicate)	09.10.08 10.10.28	Active
5	Quarters (№42-46,58-65,70-80,88-92,100) of Pshavela Forestry of Telavi Forest District of Kakheti Regional Forest Division	4,807	6,024	Georgian Wood and Industrial Development Co. Ltd".	1000039 (100004 Duplicate)	09.10.08 10.10.28	Active
Guria							
1	Quarters (№24,36-40,42-83) of Zoti, Quarters (№22-26,34-39,49-51) of Zemo-surebi Forestries of Chokhatauri Forest District of Guria Regional Forest Division	5,382 (Chokhatauri Forest District) 1831 (Zemo-surebi Forest District)	11,022	LTD "Guria JP"	100071	15.10.08 15.10.28	Active

Source: DES 2019 - provided for project preparation

The total annual allowable cut is only roughly 98.000 m³ according to the license, however AACs were determined without forest inventories and the allocated amounts are often much higher

than what can be sustainably harvested within the forested area. The State Audit Office suggests that actual removals are much lower than the annual allowable cuts within the license, and are thus not reliable.³ NFA estimates that around 34,586m³ of commercial timber are harvested from forests in the three regions (see Feasibility Study Chapter 5.1.2.1).

Previously, only license holders had the right to carry out main harvesting activities for commercial wood. Consequently, they became the only legal source for the timber processing industry. As a consequence of this policy:

- Licensed forests do not satisfy the timber demand of the timber industry throughout the year;
- Owners of the license themselves have created their own timber processing enterprises (sawmills). Their priority is to provide timber to their own sawmills or to the ones associated with them. However, they cannot even provide stable timber to their own sawmills. Thus, they import unseasoned plank from the Russian Federation and Turkey. The imported wood is then dried and processed and sold as processed plank or parquet to foreign markets. Iran is the main export country.

Since 2013, there are no new licenses issued. However, the private sector licensees remains an important player in the forest sector since:

1. **Most licenses are valid until 2028, unless** they violate the regulations with the consequence of the forest authority of cancelling or suspending the license;
2. **The license holders have established organized groups for timber logging and transportation**, which do not only serve timber extraction but also do carry out external services (such as timber harvesting for NFA, transporting, and fuelwood preparation for budgetary organizations);
3. **The license holders own primary processing enterprises (sawmills)**, which process own timber, timber from NFA and imported timber.

The interrelationship between license holders, sawmills, service providers and NFA can be observed in the following Figure 1.

³ State Audit Office 2016b.

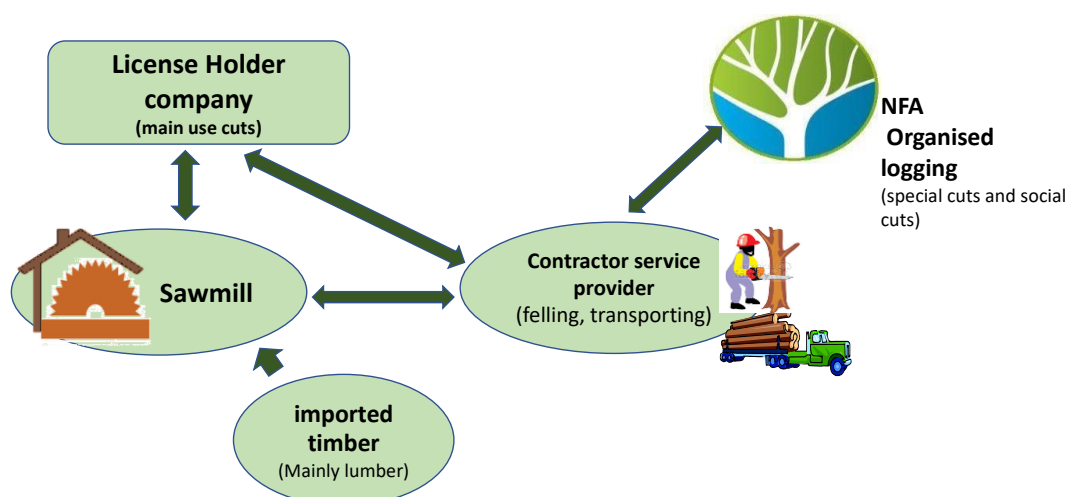


Figure 1: Interrelationship between license holders, sawmills, service providers and NFA

Source: State Audit Report 2016b

It is important to note that the license holders with service provider groups and/or sawmills connected with them, remain an important player in the forest sector, even if the licenses cease their validity in 2028.

In order to comply with sustainable forest management it would be necessary to:

- Carry out inventory in their licensed forests within the project target regions;
- Based on the inventory, improved forest management plans should be elaborated, applying the principles of sustainable forest management;
- Working with license holders to **increase awareness** on legal obligations and competences;
- Working with timber logging and transportation groups established by the license holder in terms of acquiring and implementing low impact technologies for timber production and transportation;
- Working with sawmills owned by a license holder on legislative requirements and electronic accounting system, in order to comply with legal obligations. (See details in sub-chapter 3 - timber industry).

At the same time, it is important that the state intensifies control and improves forest supervision to comply with law enforcement duties, ensuring liability for damages in forested ecosystems is established.

2.2 Service providers for felling, transporting and planting

The timber production and transportation services are carried out in Georgia by three different groups, which we will describe in this chapter:

1. Logging and transportation groups established by license holders;
2. Logging and transportation groups (including those established by licensees), which are contracted by NFA;
3. Informal Service providers within the so-called social cutting.

4. Planting services

2.2.1 Logging and transportation groups established by license holders – for license holders (i.e. not contracted by NFA)

In the previous section, we highlighted the importance of logging and transporting groups established by licensees. In general, they have more *'modern'* equipment compared to other groups. For example, "M. House +" and Ramaz Lepsveridze (one of the license holders in the project area) has established two groups of 15 people with appropriate machinery and equipment. Details can be observed in Annex 2.

However, none of them has a kind of certification document, since this is not required by national legislation. They are not trained in terms of proper low-impact cutting operations (planning and operationalization), occupational health, safety and security, labor laws, regulations, and best-practices for SFM, in particular ecosystem-based forest management.

In order to comply with SFM, in particular ecosystem-based forest management, they need to be provided with training on low-impact cutting operations, and transportation. Also, all transportation trucks should be fitted with GPS systems, and formally registered to improve transparency in timber tracking and value chains in Georgia (see Feasibility study Chapter 5.2.3 and 6.2-6.3).

2.2.2 Logging and transportation groups (including those established by licensees), which are contracted by NFA

As for the logging and transportation groups contracted by the NFA, many of these groups legally appeared on the market since 2017 when NFA increasingly started organizing the timber production process. As explained before, these groups existed earlier (informally) and served the local population within the so-called *'social wood program'*. However, to be able to participate in the NFA tenders, they had to register as a legal forest enterprise.

According to NFA data, the number of forest enterprises registered in 2018 was 130 (nation-wide). Out of these, there are six in Kakheti, four in Mtskheta-Mtianeti and six in Guria (see Table 2). They have very limited harvesting capacities, where they are harvesting an estimated 2,000 m³ per year.⁴ Inadequate equipment, lack of training and knowledge, difficult road access and seasonal working only results in low annual harvesting capacities.

Service providers often use outdated equipment, usually from the Soviet Union time. According to interviews conducted, the service providers hire old equipment and do not own it. However, the hired equipment is not always available and is often in poor conditions. Equipment is often not suited for SFM, or especially ecosystem-based forest management – and may lead to unnecessary environmental impacts and damage (e.g. increasing road damage, excessive erosion, excessive impact on surrounding vegetation, etc.).

⁴ The capacity of the registered service providers is based on interviews with them and based on informed estimates.

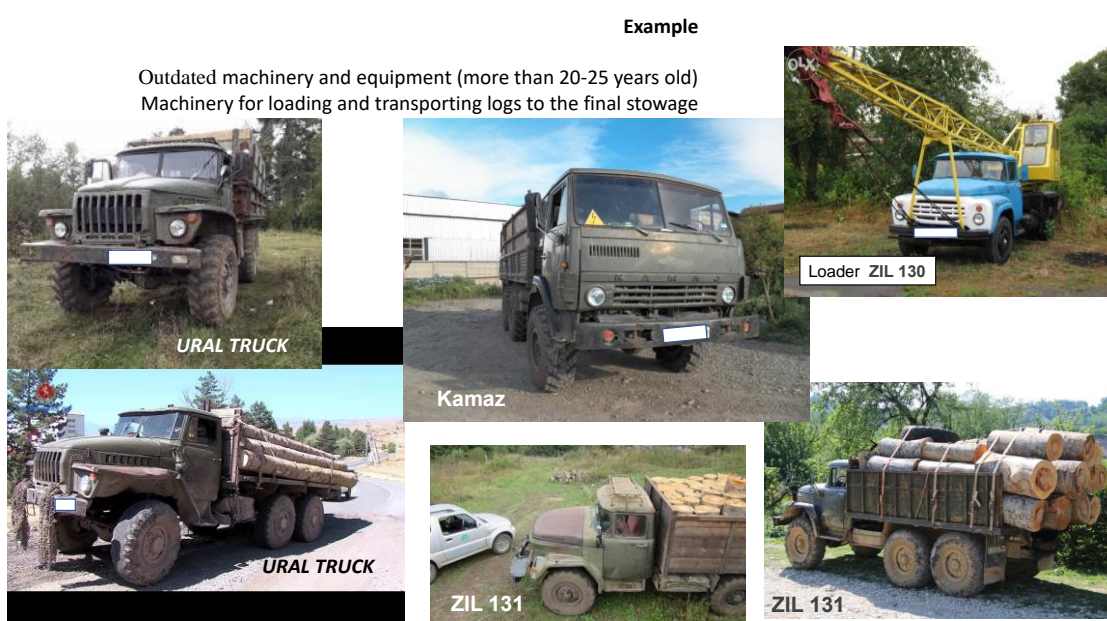


Figure 2: Outdated equipment of logging service providers

They also have no official qualification documents (e.g. certificates)⁵ for implementing the respective service. Therefore, their skills do not meet technical standards for SFM and ecosystem-based forest management, nor occupational health and safety standards for timber production and transportation.

⁵ More detailed information on the New (draft) Forest Code and new requirements for foresters and forest workers is provided within the Feasibility Study in Chapter 5.2.

NFA expects the companies to comply with the minimum technical standards:

- All-terrain truck (for transporting logs to the final stowage) - 2 pcs.
- Skidder or tractor with winch - 1 pc.
- Bulldozer in case of service providers for rehabilitation of forestry roads - 1 pc.
- Chainsaw - 2 pcs.

However, currently private sector service providers cannot invest in modern equipment and safety standards. This is due to the following reasons:⁶

- The total volume harvested per year does not justify the investment in new equipment;
- They currently have only **short term contracts of maximum one year, which does not give the necessary legal and financial backing to invest in new equipment;**
- They lack access to bank credits.

A possibility might be purchasing equipment as a group or association with a respective regulation.

Table 2: Service providers (felling, transporting) in project regions

#	License Number	Forestry District	Service provider
Region – Kakheti estimated harvesting capacity: 12,000 m³ annually - estimated			
1	180003530	Kvareli-Lagodekhi	Ltd A-R SHAINIDZE BUSINESS COMPANY
2	180006429	Sagarejo-Gurjaani	I.E. Teimuraz Mirianashvili
3	180003528	Kvareli-Lagodekhi	Ltd Zura
4	180006766	Kvareli-Lagodekhi	Ltd Laz
5	180002053	Telavi	Ltd Nakarali
6	180004336	Telavi	Ltd Kazbegi-Pshaveli
Region – Guria estimated harvesting capacity: 7,000 m³ annually - estimated			
1	180006367	Chokhatauri	I.E. Avtandil Sikharulidze
2	180006368	Chokhatauri	I.E. Giorgi Mgaloblishvili
3	180006745	Ozurgeti-Lanchkhuti	I.E. Gocha Iremadze
4	180006007	Ozurgeti-Lanchkhuti	I.E. Gocha Qatamadze
5	180005054	Lanchkhuti	I.E. Tina Tsintsadze
6	180006562	Ozurgeti-Lanchkhuti	I.E. Mikheil Glonti
Region – Mtskheta-Mtianeti estimated harvesting capacity 7,000m³ annually - estimated			
1	180007199	Tianeti/Pasanauri/Barisakho	I.E. David Nadibaidze

⁶ See Feasibility Study 5.2.3.4 for a more detailed discussion on investment barriers for the private sector within the context of the project.

2	180004911	Tianeti/Pasanauri/Barisakho	I.E. Konstantine Nadiradze
3	180004906	Tianeti/Pasanauri/Barisakho	Ltd Anzori 66
4	180007200	Pasanauri/Barisakho	Ltd Doshita

Source: NFA, 2019

2.2.3 Informal service providers within the so-called ‘social wood program’

These groups are spontaneously self-organized groups in the communities (with 3-5 personnel), and minimum out dated technical equipment: petrol-driven power saw, all-terrain vehicle and manual power. The service providers do not have any qualification documents (which is also not required yet by NFA) for implementing the service and neither knowledge nor skills. These service provider groups basically learned on practical experience acquired over the years. They do not meet technical and safety standards and norms for timber production.

It should be also noted that they have **no legal status** and their activities are entirely out of legal and economic framework (they do not pay any taxes). There is no official information about them.

This category of timber producers is a serious challenge for the state, because a large part of uncontrolled actions and illegal cuttings is connected with the activities of this category of groups. Therefore, efforts need to be made to integrate this category of groups into the legal process. There is currently an attempt by NFA to engage them in the production process as a service provider subcontractor. As a result of this attempt, some of these groups are now registered legally but still many groups are not. One limitation is that production of timber through NFA contracts is of seasonal character and of limited scale. This mechanism **cannot create a stable employment**. On the other side, they could become an important arm of **seasonal forest workers which would create seasonal income especially in winter time where there are little agriculture or construction jobs**.

Based on this analysis it is important to create a system of organized forest management groups consisting of various legal organized and trained service provider types, which will replace the so-called “social cutting” system. **The illegal groups of timber logging should be maximally integrated and converted into the legal framework.**

2.2.4 Planting services and tree nurseries

After the year 2000, organized measures for reforestation and afforestation have been implemented on a very limited scale (see Table 3 or refer to Feasibility Study Chapter 5.1.3). There are only fragmented activities on limited areas (see Table 3 and 4). In the project region some limited afforestation was reported with hazelnuts, robinia for vineyards and walnuts.

NFA implements the measures with own resources and uses the available planting material in temporary forest nurseries. According to the NFA, during 2015-2018, eleven new temporary nurseries have been established in different regions.⁷

⁷<http://sanerge.com/en/>.

License holders do not implement activities of afforestation or reforestation or restoration. Therefore, at this stage **there is no demand for seedlings**. Private sector is currently not interested to invest in a potential business development. **The private sector therefore is mainly focused on development of ornamental or urban forestry and gardening**. In this regard, it should be noted that this business is developing dynamically, and the number of nurseries increases every year.

However, there is a potential to develop a business in the field of fast growing plantations for fuelwood provision with poplar or robinia. Hazelnut and walnuts plantations also have a commercial potential. The respective demand could be stimulated by the new "Law on Environmental Responsibility", which will oblige lawbreaker to invest on restoration and to compensate damaged environment. Implementation of restoration measures undertaken by NFA and other government bodies in future might also create a market for commercial tree nurseries.

Table 3: Afforestation on Georgia 1995 to 2010

Year	Afforestation and reforestation (ha)
1995	13,912
2000	1,158
2005	74
2010	165
2015	142
2016	178
2017	156

Source: Geostat, 2017

Table 4: Reforestation activities 2013-2017 year

Region	Nursery /ha					Planting /ha					support of natural re-generation /ha					fast-growing plantation /ha				
	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017
Mtskheta-Mtianeti		0.3								2.4										
Kakheti		0		0	0													6	2	
Guria		0							1					1						

2.2.5 Summary

Private sector service providers (SP) in Georgia face serious challenges:

- SP currently **do not have the adequate experience and skills** of low impact logging and do not possess knowledge about safety standards, silviculture measures and adequate equipment;
- The small-scale timber logging organized by NFA has not yet been able to convert the self-organized production groups into legal SP enterprises. SP groups hire other self-organized groups in communities, or make contracts with individual physical persons (such as the owner of a tractor or all-terrain vehicle, owner of petrol-driven power saw) and

create sub groups. These **specific groups remain illegal** without any health and safety standards and specific knowledge or training;

- SP **do not have adequate technical equipment**. Exceptions are production groups, associated with large-scale license holders, which have relatively better equipment;
- Currently SP **have little motivation for investment in equipment** and knowledge; since there is no guarantee that they will be able to continue their activities (NFA contracts are valid for one season only). Also, during interviews, SP indicated that access to credit is difficult and tender terms offered by NFA are not profitable. Consequently, they are very reluctant to invest;
- The amount of timber/ fuelwood harvested does not justify investments in equipment, unless organized in associations of groups.

In order to overcome these challenges, it is necessary:

- **Provide service providers with long-term contracts**. This will stimulate investments for long-term business development. (Probably, this will be managed after the reform, when the system of organized carrying out of forest farming will be created);
- **Clear commitment of NFA to outsource logging, harvesting and transportation to the private sector**;
- **Training** - in terms of acquiring and implementing low impact logging techniques for timber logging and transportation In future, SP should prove qualification through certification and training participation;
- **Upgrading of technical means and equipment (including safety equipment) for SFM, in particular ecosystem-based forest management** - as noted above, SP groups still use outdated equipment of the Soviet period;
- Means should be identified where SP could purchase equipment either on an individual basis or through groups or associations. Currently they do not have access to bank credits since they lack a guarantee (long term contracts, or ownership);
- The state should adjust the price for procurement of timber production service to a market based price which allows SP to invest and survive economically. Additional motivation will be an exemption of timber production from VAT, as export is exempted;
- Access to bank credits or a guarantee fund should be created.

2.3 Timber industry

This sub-chapter is based on the data of Geostat 2016. The number of nationwide enterprises associated with the primary processing of wood, secondary machining and timber production are 3,773 enterprises, out of which 1,391 (36.9%) are active (see Table 5).

Table 5: Enterprises in the wood processing, wood production and secondary processing nationwide, 2016

No. of businesses / status (if active/operational)	No.	Percentage of companies in the region (%)
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Total number of registered business subjects In Georgia	3,773	100%
Of which active	1,391	37%

Source: GEOSTAT, 2016

The legal form of these companies is mostly limited company (LTD) or individual entrepreneur. Only 10 enterprises are registered as joint stock companies, however none are registered in the project regions (see Table 6).

Table 6: Legal form of forest enterprises

By legal form	Georgia	Mtskheta-Mti-aneti	Guria	Kakheti
Private Entrepreneur (LTD)	634 (45.6%)	10	5	17
Individual Entrepreneur (IE)	746 (53.6%)	8	24	55
Joint-stock company (JSC)	10 (0.7%)	0	0	0
Solidarity society	1	0	0	0

Source: GEOSTAT, 2016

The distribution of these enterprises can be observed in the following Table 7.

Table 7: Distribution of forest service providers per region

By activity	No. of Enterprises			
	Total	Mtskhe ta-Mti- aneti	Guria	Kakheti
Sawing of wood	34	5	12	17
Chairs and other seating furniture production	25	8	2	15
Manufacturing of other types of furniture	22	2	7	13
Production of wooden joinery	18	1	3	14
Manufacturing of different types of furniture by individual order	9	1	4	4
Kitchen furniture manufacturing	2	0	1	1
Scrubbing and planning of timber, impregnation of wood	1	0	0	1
Manufacture of wooden decorative items	3	0	0	3
Manufacture of furniture for office and trade enterprises	3	0	0	3
Manufacture of wooden panels	1	0	0	1
Production of wooden shaft	1	1	0	0

Source: GEOSTAT, 2016

In the following sub-chapters, the situation within the project's target regions will be further discussed.

2.3.1 Mtskheta-Mtianeti Region

Mtskheta-Mtianeti region consists of 4 municipalities: Mtskheta, Dusheti, Kazbegi and Tianeti municipalities. The number of companies registered in the region is 75, out of them only 18 have active status (see Table 8).

Table 8: Number of registered forest companies in Mtskheta-Mtianeti

No. of businesses / status (if active/operational)	No.	Percentage of enterprises in the region (%)
Total number of registered business subjects	75	100%
In Active condition	18	24%

Source: GEOSTAT, 2016

According to the legal form, the entrepreneurial subjects are represented almost equally in the form of LTD or individual entrepreneur (see Table 9).

Table 9: Legal status of forest enterprises per district (Municipality)

By legal form	Total	Mtskheta	Dusheti	Tianeti	Kazbegi
Private Entrepreneur (LTD)	10 (55.5%)	4 (40%)	3 (30%)	1 (10%)	2 (20%)
Individual Entrepreneur (IE)	8 (44.5%)	3 (37.5%)	2 (25%)	3 (37.5%)	0

Source: GEOSTAT, 2016

As for the types of activities, their distribution according to the region and municipalities in the region (according to active subjects), see Tables 10 and 11.

Table 10: Type of activities of forest enterprises in number and percentage in Mtskheta-Mtianeti

Activity	No. of enterprises	Percentage of enterprises in the region (%)
Sawing of wood	5	28%
Chairs and other seating furniture production	8	44%
Manufacturing of other types of furniture	2	11%
Production of wooden joinery	1	6%
production of wooden shaft	1	6%
Manufacturing of different types of furniture by individual order	1	6%

Source: GEOSTAT, 2016

Table 11: Type of forest enterprises per municipality

By Municipality	From total	Sawing of wood	chairs and other seating furniture production	Manufacturing of other types of furniture	Production of wooden joinery	production of wooden shaft	Manufacturing of different types of furniture by individual order
No. of enterprises per municipality (% of total)							
Mtskheta	7 (38.9%)	1 (20%)	1 (12.5%)	2 (100%)	1 (100%)	1 (100%)	1 (100%)
Dusheti	5 (27.77%)	1 (20%)	4 (50%)	0	0	0	0
Tianeti	4 (22.22%)	3 (60%)	1 (12.5%)	0	0	0	0
Kazbegi	2 (11.11%)	0	2 (25%)	0	0	0	0

Source: GEOSTAT, 2016

As the Table 11 shows, the main type of activity in the region is the use of timber and the seating furniture, the remaining activities are only in Mtskheta municipality.

Majority of forest enterprises (3 sawmills) are in Tianeti municipality (it should be noted that 5 long-term licenses for forest use are active in Mtskheta-Mtianeti region, 4 of them are in Tianeti municipality and 1 in Dusheti municipality, see Table 1). As for Kazbegi municipality, the forestry index here is very low, respectively, and there is little to no potential for development of the timber industry.

2.3.2 Kakheti Region

Kakheti region consists of 8 municipalities: Sagarejo, Gurjaani, Telavi, Akhmeta, Kvareli, Dedoplistskaro, Lagodekhi and Signaghi municipalities. There is no entrepreneurial subject registered with active status in Signaghi municipality.

The number of companies registered in the region is 248 subjects, out of them only 72 have active status (see Table 12).

Table 12: Number of registered forest companies in Kakheti

No. of businesses / status (if active/operational)	No.	Percentage of enterprises in the region (%)
Total number of registered business subjects	248	100%
In Active condition	72	29%

Source: GEOSTAT, 2016

According to the legal form of entrepreneurial subjects are presented in the form of LTD or individual entrepreneur, in this case subjects with entrepreneur status prevail (see Table 13).

Table 13: Legal status of forest enterprises per district (Municipality)

By legal form	total	Telavi	Gurjaani	Akhmeta	Kvareli	Lagodekhi	Dedoplistskaro	Sagarejo
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Private Entrepreneur (LTD)	17 (23.6%)	8 (47%)	1 (5.9%)	2 (11.8%)	1 (5.9%)	1 (5.9%)	2 (11.8%)	2 (11.8%)
Individual Entrepreneur (IE)	55 (76.4%)	20 (36.4%)	8 (14.5%)	14 (25.4%)	5 (9%)	2 (3.6%)	2 (3.6%)	4 (7.2%)

Source: GEOSTAT, 2016

As for the types of activities, their distribution according to the region and municipalities in the region (according to active subjects), see Tables 14, 15.

Table 14: Type of activities of forest enterprises in number and percentage in Kakheti

By activity	No. of enterprises (% of total)
Sawing of wood	17 (23.6%)
chairs and other seating furniture production	15 (20.8%)
Manufacturing of other types of furniture	13 (18%)
Production of wooden joinery	14 (19.4%)
Manufacturing of different types of furniture by individual order	4 (5.5%)
Kitchen furniture manufacturing	1 (1.38%)
scrubbing and planning of timber, impregnation of wood	1 (1.38%)
Manufacture of wooden decorative items	3 (4.1%)
Manufacture of furniture for office and trade enterprises	3 (4.1%)
Manufacture of wooden panels	1 (1.38%)

Source: GEOSTAT, 2016

Table 15: Type of forest enterprises per municipality in Kakheti

By Municipality	From total	Sawing of wood	chairs and other seating furniture production	Manufacturing of other types of furniture	Production of wooden joinery	Manufacturing of different types of furniture by individual order	Kitchen furniture manufacturing	scrubbing and planning of timber and impregnation of wood	Manufacture of wooden decorative items	Manufacture of furniture for office and trade enterprises	Manufacturing of wooden panels
Telavi	28 (38.8%)	2 (11.7%)	11 (73.3%)	8 (61.5%)	2 (12.3%)	0	0	1 (100%)	2 (66.7%)	1 (33.3%)	1 (100%)
Gurjaani	9 (12.5%)	2 (11.7%)	1 (6.6%)	2 (15.4%)	3 (21.4%)	1 (25%)	0	0	0	1 (33.3%)	0
Akhmeta	16 (22.2%)	8 (47%)	1 (6.6%)	0	5 (35.7%)	1 (25%)	0	0	1 (33.3%)	0	0

Kvareli	6 (8.3%)	2 (11.7%)	0	0	1 (7.1%)	2 (50%)	0	0	0	1 (33.3%)	0	0
Lagodekhi	3 (4.1%)	1 (5.9%)	0	1 (7.7%)	1 (7.1%)	0	0	0	0	0	1 (33.3)	0
Dedoplistskaro	4 (5.5%)	0	2 (13.5%)	0	1 (7.1%)	0	1 (100%)	0	0	0	0	0
Sagarejo	6 (8.3%)	2 (11.7%)	0	2 (15.4%)	1 (7.1%)	0	0	0	0	1 (33.3%)	0	0

Source: GEOSTAT, 2016

As it can be observed in 14 and 15, the main type of activity in the region is the timber sawing and furniture production. The furniture production is mainly developed in Telavi municipality.

The majority of forest enterprises (8 sawmills) are in Akhmeta municipality. It should be noted that 4 long-term licenses for forest use are active in Kakheti region, 2 of them are in Akhmeta municipality, 1 in Kvareli municipality, and 2 in Telavi municipality (see Table 15).

2.3.3 Guria Region

Guria region consists of 3 municipalities: Lanchkhuti, Chokhatauri and Ozurgeti municipalities. The number of companies registered in the region is 90 subjects, out of them only 29 have active status (see Table 16).

Table 16: Number of registered forest companies in Guria

No. of businesses / status (if active/operational)	No.	Percentage of enterprises in the region (%)
Total number of registered business subjects	90	100%
In Active condition	29	32.2%

Source: GEOSTAT, 2016

According to the legal form, the entrepreneurial subjects are presented in the form of LTD or individual entrepreneur; most of which unlike other regions have the status of individual entrepreneur (see Table 17).

Table 17: Legal status of forest enterprises per district (Municipality)

By legal form	Total	Lanchkhuti	Ozurgeti	Chokhatauri
Private Entrepreneur (LTD)	5 (17.8%)	1 (20%)	3 (60%)	1 (20%)
Individual Entrepreneur (IE)	24 (85.7%)	6 (25%)	9 (37.5%)	9 (37.5%)

Source: GEOSTAT, 2016

As for the types of activities, their distribution according to the region and municipalities in the region (according to active subjects), see Tables 18 and 19.

Table 18: Type of activities of forest enterprises in number and percentage in Guria

By activity	No. of enterprises (% of total)
Sawing of wood	12 (41.4%)
chairs and other seating furniture production	2 (6.9%)
Manufacturing of other types of furniture	7 (24.1%)
Production of wooden joinery	3 (10.3%)
Manufacturing of different types of furniture by individual order	4 (13.8%)
Kitchen furniture manufacturing	1 (3.4%)

Source: GEOSTAT, 2016

Table 19: Type of forest enterprises per municipality in Guria

By municipal- ity	From total	Sawing of wood	chairs and other seating furniture produc- tion	Manu- factur- ing of other types of furni- ture	Produc- tion of wooden joinery	Manufac- turing of different types of furniture by individ- ual order	Kitchen furni- ture manu- factur- ing
Lanchkhuti	7 (24.1%)	2 (16.6%)	1 (50%)	3 (43%)	1 (33.3%)	0	0
Ozurgeti	12 (41.4%)	3 (25%)	1 (50%)	2 (28.5%)	2 (66.7%)	4 (100%)	0
Chokhatauri	10 (34.5%)	7 (58.3%)	0	2 (28.5%)	0	0	1 (100%)

Source: GEOSTAT, 2016

As the Table 19 shows, the main type of activity in the region is sawing of wood and manufacturing of furniture. In general the region is not distinguished by the diversity of timber production, nor does the region have the necessary commercial timber resources. Most of the plants (7 sawmills) are in Chokhatauri municipality. It should be noted that the only operating license for forest use is in Chokhatauri municipality (see Table 19).

2.3.4 Analysis of sawmill industry

We were unable to find reliable data on the number of registered sawmills. The Ministry did not provide requested information or does not have it. The Revenue Service of Georgia has some information (<https://www.rs.ge/Login.aspx>), but access to the databases is limited for consultants. Getting required information was not possible. Apart from registered legal sawmills, there are illegal sawmills operating, which makes estimations or calculations even more uncertain. Therefore, the volumes presented here are best expert's estimations.

In all three regions of the project, the number of sawmills with active status is 35 (Guria - 12; Kakheti - 18; Mtskheta-Mtianeti - 5). Most of these firms belong to license holder companies or are associated with them as a timber resource supplier (see Scheme 2). In other cases, sawmills have not a legal source of supply of raw materials. Only the social cuts from NFA have provided some limited timber supply in the last two years. With only 26.000 to 33.000 m³ per year, this source is relatively small compared to timber from licensees.

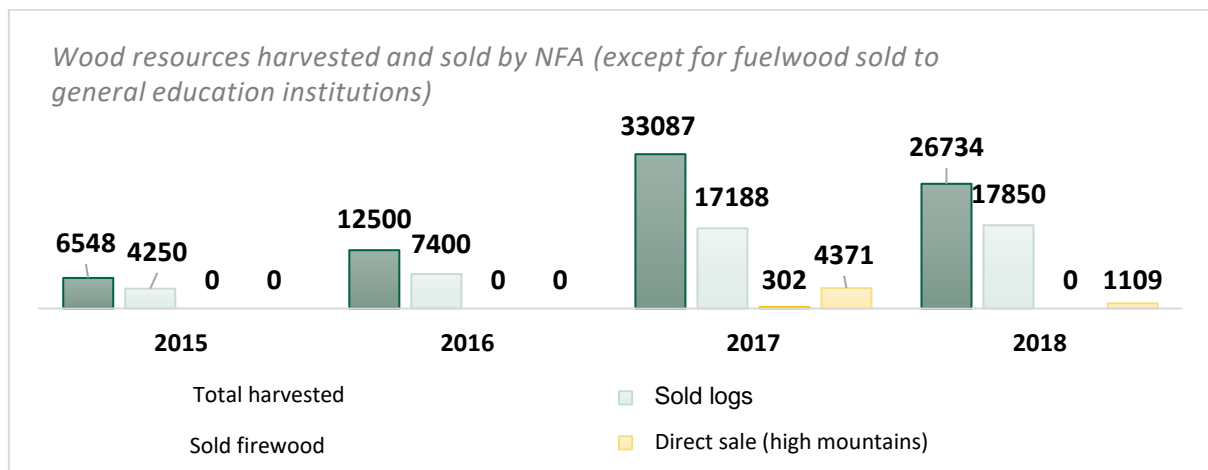


Figure 3: Wood harvested and sold by NFA 2015 -2018 (m³)

Source: NFA, 2019

The produced timber on auctions is purchased by sawmills, associated with the license holders. Most NFA timber producers are most likely companies - license holders or companies, associated with them. In fact, these companies buy their own produced timber on auction for their own sawmills (e.g. “Kazbegi-Pshaveli LLC”, Kakheti region).

The figure below indicates the connection between suppliers and the sawmills in the commercial wood chain. The sawmills are connected with the license holders or are owned by the license holders. NFA and license holders provide timber to the sawmills. From there the secondary industry is supplied.

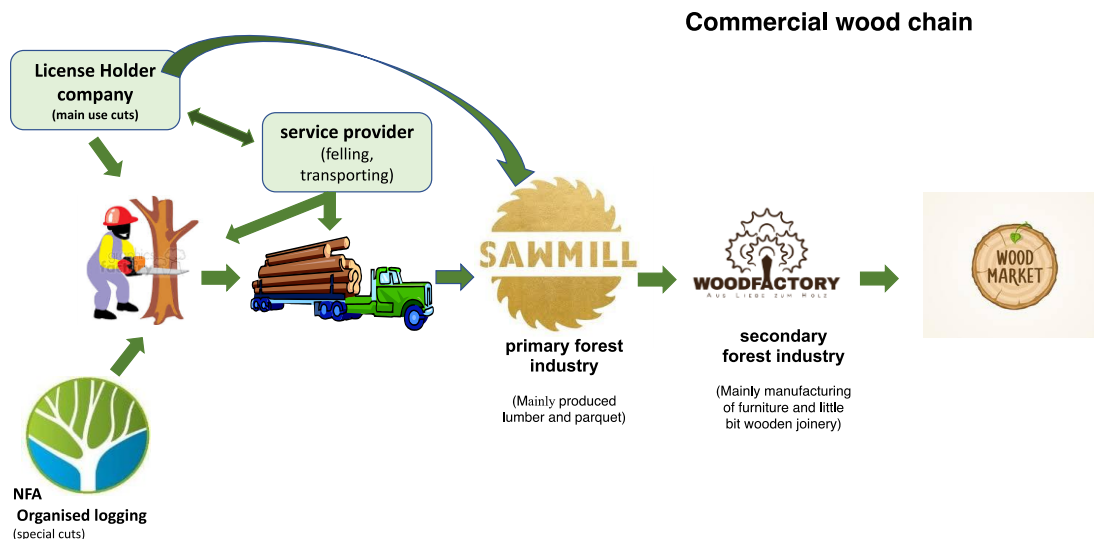


Figure 4: Commercial wood value chain

Consequently, it is clear that sawmills that are not associated with license holders or NFA contractor producers, **do not actually have adequate source of legal raw material**. As a result, they simply stopped functioning or moved into illegal business. This is a major challenge to the state. The number of this type of illegal sawmills is much higher than the one of legal sawmills registered and with active status.

Info Box 1. Profile of a wood processing company

Hualing Group significantly contributes to development of Georgian wood industry. Georgia has rich forest resources, forest covers 40% of country's territory. In 2008 company obtained wood processing license for 20 years with the right to annually process 88 000 cubic meters of wood. At present, annual harvesting volume is 30 000 cubic meters which is much less than the annual allowable volume.

The Company utilizes coordinated one-stop service wood recycling system, including wood cutting, processing, furniture manufacturing and exporting free of tax from the free industrial zone of Kutaisi. Kutaisi furniture factory occupies an area of 20,000 sq. m.; the furniture exhibition hall is 2,500 sq. m.

Timber is exported from Poti port which is located near the free industrial zone. Around 95% of timber is exported to Central Asia, Egypt, Iran, Iraq and the United Arab Emirates, and the remaining 5% is sold on domestic market. Furthermore, the end product of timber is exported to Turkey, Armenia, China and Dubai.

Source: <http://hualing.ge/language/en/wood-development/>

Until 2006, most of the legitimate sawmills used short-term, 1-year forest use licenses, and they satisfied their own demand for timber themselves. Since only licensees have been given exclusive rights for commercial production of timber they become the only legal source of timber. Only some of the sawmills connected to license holders were able to continue their activities. The following data is based on estimations by the expert. The capacity of the registered sawmills is estimated as follows.

Table 20: Estimated annual cutting capacity of sawmills in the project regions

Region	Number of sawmills	Estimated annual capacity m ³
Kakheti	17	65,800
Guria	12	28,600
Mtskheta-Mtianeti	5	13,400
Total	34	107,800

Source: Own elaboration, based on estimations

Along with the **lack of timber supply**, manufacturers are dissatisfied with the quality of local timber. Additionally, the processing lines of manufacturers themselves are out dated or imperfect (e.g. most of them have no drying facilities). Consequently, the timber products in Georgian sawmills is largely of **low quality**. The most part of it is being exported to the foreign markets (Iran, China).

Some large sawmills related to license holders are trying to compensate the lack of timber supply by purchasing imported sawn wood, mainly from the Russian Federation and Turkey. According to interviews they say, that imported board is of better quality and lower price than the local products. For example, "M. House + purchases every year approximately 5,000 m³ of imported green wood for the own sawmill. It is then dried and then exported as plank or parquet, mainly on the Iranian market.

The main challenges can be summarized as follows:

- Shortage of wood supply;
- Outdated sawing equipment and technologies;
- Inadequate sawing line (i.e. lack of equipment for log handling, stackers, log turners, sorters, conveyors and debarkers;
- Lack of qualified personnel;
- No safety standards;
- No waste-processing or recycling technologies.

2.3.5 Secondary forest industry

As for secondary processing, a manufacturing of furniture is mainly developed in the target regions, also in a form of single enterprises: Production of wooden joinery (Kakheti 14 sub. Mtskheta-Mtianeti only 1 sub., and Guria 3 sub.), and manufacturing of wooden decorative items (3 sub. only Kakheti).

The **shortage of sawn timber** and its high price negatively impacted the sector of secondary processing. **80% of the secondary industry uses the low-quality wood-chipboards**, plywood, OSB and MDF, which cannot create high additional value. This has been confirmed by the leaders of the associations Georgian timber processing and furniture manufacturers and Georgian furniture inventory.

Despite the shortage of industrial timber in the country, consumption of timber in sawmills is not made at the local level and its large portion is exported abroad (mainly to Iran, China). This is confirmed by the GIZ 2016 research, according to which the secondary wood working industry is using only about 20% of lumber in their products with a distribution of 30% for coniferous and 70% of non-coniferous lumber.

Obviously, this situation does not create quality products in the country and, accordingly, high added value.

The analysis of data shows that there is an interest of the private sector in the timber industry. There is a potential of its development, because **today operating sawmills and secondary processing enterprises work up to 50% of their capacity**. Most of them use only 20 to 30% of their capacity.

If the large number of inactive enterprises are added, and conditions would allow a stable legal supply of timber, this would imply a great potential for the forest industry. It could create more jobs, more quality, more value added and more income to the state (Tax, VAT, selling timber).

Existing challenges and possible solution:

- There is a lack of a well-organized legal system of wood to provide stable supply of legal timber raw material. It is therefore necessary to create an organized legal wood supply system.
- The primary timber industry, due to shortage of raw material have either closed processing enterprises or work at limited load. In some cases they turn to illegal supply due to the lack of legal supply. The need for organized legal forest industry is evident. The potential for sustainable timber provision in Georgia can be improved through better management, access roads, improved quality of sawmills, timber technology and improved silviculture measures including thinning. However, timber import is still needed because of limited local resources.
- Secondary timber industry: The secondary timber industry is using imported wood in their production. They use 80% of low-quality wood-chipboards, plywood, OSB and MDF. This does not create high additional value.
- It is therefore necessary to create a stable national timber supply and to promote the use of national legal timber in the value chain. This will create higher added value.
- Most sawmills that do not belong to license holders use outdated facilities and technologies, so they cannot produce high quality products. It would be necessary to assist them with preferential credits, grants, for improvement of production lines and retraining in the issues of modern technologies of processing.

2.4 Actors involved in fuel firewood value chains

The extraction of firewood by the local population is mainly carried out by the so-called social cuts for personal use. According to the legislation, one family is allowed to obtain 7 m³ of firewood annually. The population in mountainous regions have a right to obtain 15 m³. Actors involved in the firewood supply chain are state agencies responsible for social felling- NFA, AFA, APA and local municipality. The role of municipality is limited to the registration of firewood

users only, and delivering this data to NFA. Further, the banking sector issues the ticket for timber manufacturing. This has a 30-day time limit after payment of fee for resource use. The bank has access to the NFA databases.

Further actors are timber cutting/transportation service provider groups and consumers (see Figure 4 and 5).

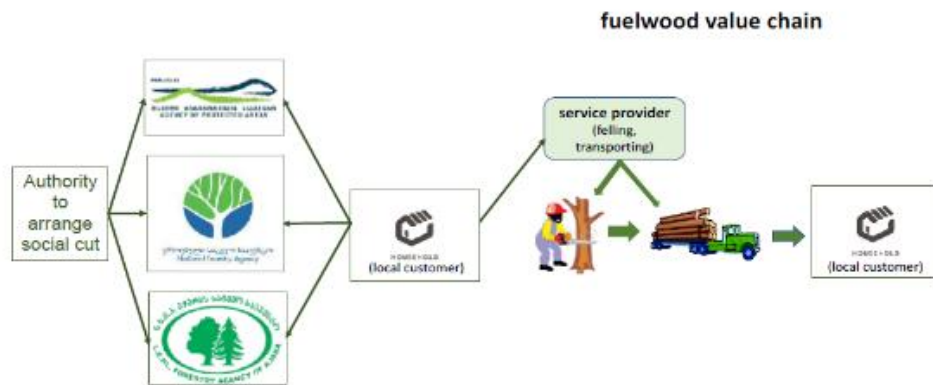


Figure 5: Fuelwood value chain

At this stage, there is no demand for the private sector, since the NFA has been providing consumers with firewood supplies since 2017, or firewood was provided by the illegal or grey market.

Selling firewood at a market prize would however be a big challenge for those consumers who do not have enough financial resources and are the most vulnerable ones. After transition to organized, legal firewood supply at a market prize, some mitigation measures should be foreseen to guarantee cheap firewood supply for those vulnerable groups.

The agencies responsible for so-called social cutting are NFA, AFA and APA (with limited scale). Their task is to allot and manage appropriate forests, as well as to issue a timber origin document. This document is also a transportation document and is valid for 12 hours and permits the transport to a citizen (consumer) who already has a timber manufacture ticket. The ticket is issued by the bank.

2.4.1 Social felling groups

After receiving a permit for the use of timber, the citizen addresses self-organized social felling groups (See Chapter 2.2.3).



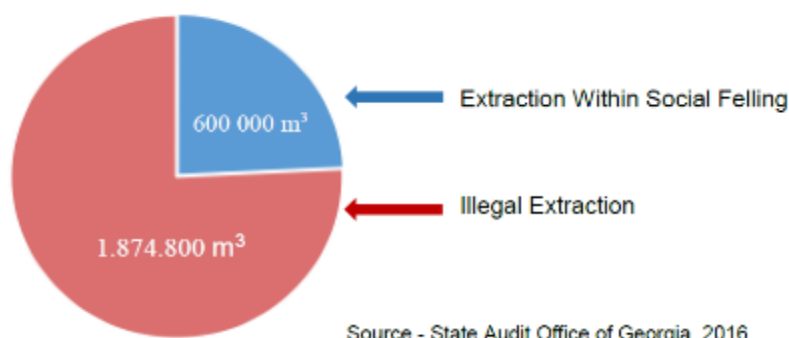
Figure 6: Process of social felling scheme Procedures necessary for social felling of trees

Source: State Audit Office of Georgia 2016a

While obtaining firewood is legal, the process still has some illegal components, since self-organized groups for timber production and transportation services are not registered and use illegal means such as:

- Using permits twice;
- Bargain for permits of individuals who do not need fuelwood and “sell” their permits;
- Bypassing supervising authorities;
- Misusing vulnerable groups for illegal cuts.

They do not have relevant knowledge to maintain sustainable production of timber and use out-dated technical equipment.



Source - State Audit Office of Georgia, 2016

Figure 7: Illegal cuts within the social felling scheme

Source: State Audit Office of Georgia 2016a

The annual cuts planned by the NFA does not satisfy the existing requirement (see Feasibility Study Chapter 5.1.2 for a detailed discussion). The allocation of areas for wood harvesting is still low. Therefore, the cutting takes place in other areas which contributes to forest degradation and deforestation (see figure 7). On one hand, the reason for this is that woodcutting territories are situated far away from settlements where there are neither forest roads nor developed infrastructure.

The following figure indicates the **lack of investments in forest infrastructure** in the project region since 2015.

Table 21: Investments in forest roads in target regions

Year	New road construction /km/	Rehabilitation /km/
Kakheti		
2015	0	4.019
2016	0	0.48
2017	0	0
total	0	4.499
Guria		
2015	0.335	10.57
2016	0	11.316
2017	0	16.892
total	0.335	38.778
Mtskheta-Mtianeti		
2015	12.37	21.26
2016	3.583	20.659
2017	0	18.019
total	15.953	59.938

Source: NFA - provided for proposal development

However, the main reason for illegal cutting is an **imbalance between supply and demand**. According to a number of researches, **the real demand for fuel timber reaches about 2.5 million m³, while the NFA annually produces approximately 600,000 m³ nation-wide.**⁸

A small amount of timber is produced by APA. Approximately 17,000-18,000 m³ declining to 7,000 m³ in 2018.

The estimated difference between the demand and supply is about 1.8 million m³. This gap is compensated through illegal cuts which results in degraded forests. The following figure highlights the amount of timber produced by NFA between 2013 and 2015. There is a gap between allocated and extracted timber due to low capacities of NFA.

⁸ Source: GeoStat. Report, 2018, page 24. http://www.geostat.ge/cms/site_images/_files/english/agriculture/Environment_2017.pdf.

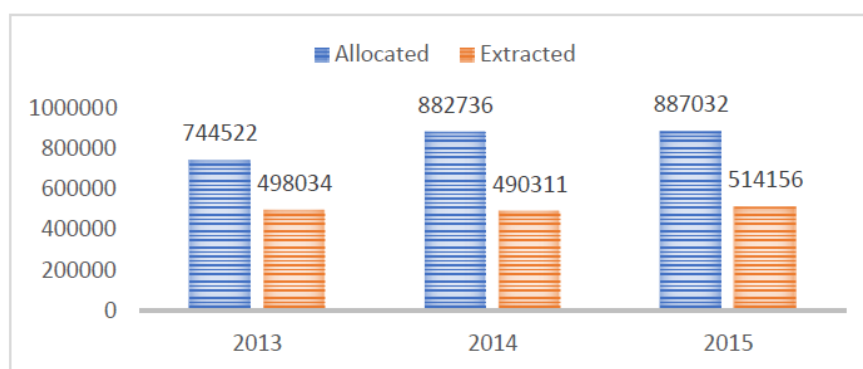


Figure 8: Amount of resource allocated by the agency and the utilized amounts in 2013-2015 (m³)

Source: State Audit Office of Georgia 2016a

Possible strategies to overcome the challenges

In order to overcome the challenges of illegal cuts and lack of timber and fuelwood supply the following measures could be applied:

- Formation of organized state forest enterprise to carry out commercial timber cuts and fuelwood production
- Establishment of new mechanism for the provision of fuelwood and timber (planned – see Feasibility Study Chapter 5.2.3)
- Invest in technologies for timber production and transportation.
- Integrating illegal timber social cutting groups in the legal process
- Invest in forest infrastructure
- Invest in so-called business yards in all municipalities
- Introduce a flexible and transparent system of selling timber
- Establish an effective system of control and monitoring
- Strengthen the control capabilities (DES)
- Outsource services such as road construction, timber harvesting and transporting to the private sector with long term contracts and appropriate planning and supervision.
- Implementation of tending cuts (currently it is not conducted)
- Providing alternative fuel resources
- Support energy efficiency in cookstoves and isolation of houses
- Promoting the use of timber waste for energy use. *(According to the research of GIZ 2016, in the case of use of such waste for energy purposes, it will be possible to reduce the country's demand for fuel wood to 600,000-700,000 cub. meters, which is approximately the same amount that the NFA annually allocates for cutting).*

2.5 Service providers for inventory and planning

Inventory of forests has not been conducted in Georgia for the last two decades. It was implemented only in a few regions. Thus, there was no demand for inventory services until recently.

This led to a lack of specialists with skills and equipment for forest inventory. Young forest experts currently have no motivation to commit their future professional activities with this sector, since the demand is unclear and irregular.

However, there are a few registered companies. For the obvious reasons, they do not have permanent staff and in a case of necessity they need to hire specialists working individually. However, due to the lack of specialists in the country, these companies do not have the resources to carry out large-scale inventory services, such as the **National Inventory of Forests**.

The companies which offer implementation of forest inventory services are:

- GIS and GIS and RS Consulting Center “GeoGraphic,” this company is not only focused on forests, but is technically capable of forest inventory service (has full software);
- “Forest project Ltd.” is mainly focused on forests, but it does not have the software, therefore it needs subcontractors’ service;
- M³ Ltd. is mainly based on forest and also has software, but currently its right of service is legally restricted;
- “Senson Ltd.”, though they have not provided services to NFA and APA, respectively, we do not know anything about their potential and qualification.

Due to these limitations the national inventory in 2018 could not be accomplished according to schedule (it is still ongoing).

With the support of GIZ within the NFI process, a team comprised of several young specialists were retrained, who carried out inventory in Akhmeta municipality in a pilot mode. The NFA also has a plan to retrain specialists and create a group for inventory of the level of management. Although this support is motivating young professionals, without a regular demand by the Government for inventory service, these persons and companies will not be able to provide the necessary expertise in the long run.

A clear demand as the legislation envisages, should be formulated by NFA.

It should be noted that in times past in Georgia a highly qualified and experienced staff existed, that was a powerful organization, the Georgian enterprise of the all-union amalgamation “Tkeproeqti” (forest project), which rendered service not only in Georgia, but throughout the former Soviet Union. After the collapse of the Soviet Union, this enterprise ceased functioning, and part of the experienced staff changed direction, some of them continued their activities individually.

2.6 Banks and credit institutions

Currently there is only very limited demand for credit in the forest sector. The only investments of private sector was the investment made by license holders. In most cases, they used their own capital and they did not require credits of banks and credit institutions. Therefore, there are no targeted loan products tailored for the forest sector.

For example, “Kazbegi-Pshaveli” Ltd. with an own sawmill in Kakheti region, had to take a **consumer loan**, because as there is no targeted loan product in the sector.

In order to motivate and develop the private sector during the reform, it will be necessary to work with the banking sector to create a preferential banking product suitable for the forest sector. Another option might be the creation of a guarantee fund.

Special products do exist in the agriculture sector. For example, a project is initiated by the Ministry of Environment and Agriculture that is aimed at improving the processes of primary agricultural production, processing, storage and sale by providing the companies with low interest rates and affordable long-term preferential funds.⁹

In order to promote the private sector for timber production, transportation, sawmills and road construction it will be necessary: to create long-term perspectives and long term guarantees for outsourcing timber production and transportation to the private sector. There should be at least five years contracts to create investments in the forest sector for timber harvesting, timber processing and forest road construction.

⁹See more information in the link http://apma.ge/projects/read/agro_credit/5:parent.

3 PRIVATE SECTOR INVESTMENT NEEDS

The analyzed data shows a high demand for legal timber which is currently not met by the supply provided by NFA and private service providers.

With the forest reforms, a new system of fuelwood and timber provision will be set up, which will be overseen by NFA. The system will be based on SFM, in particular ecosystem-based practices (see Feasibility Study Chapter 5.2.2 for more detailed information). It was decided that NFA will be responsible for implementing 30% of ecosystem-based SFM activities on the ground, whereas private sector contractors will implement the remaining 70%.

The implementation of ecosystem-based SFM requires an approach that ensures a learning curve based on the gradual scaling up of activities, that accounts for substantial time and resources to be invested early on in capacity development and infrastructure that facilitates ecosystem-based SFM in the future. Considering these challenges, in the proposed GCF project's 8 target districts it will take nearly 7 years to reach nearly full operating capacity for the full and effective implementation of ecosystem-based SFM measures (see Feasibility Study Chapter 5.2.3.4).

This implies measures for low-impact forest road construction, ecosystem-based management practices, tending, thinning, harvesting of old stands and access to remote productive forest, investments in appropriate machinery and sustainable harvesting and transporting techniques to increase efficiency. NFA will be responsible for overseeing private sector activities (see Feasibility Study Chapter 5.2 for a more detailed description of the reforms and the envisaged management structure and division of roles between NFA and the private sector).

3.1 Investment needs in cutting operations and transportation

Assuming investments will be made by NFA through the project in up to 13 own equipped and trained harvesting teams, this would allow an annual cut of some 120,000 m³ annually. So, the gap between potential harvesting volume and capacity by NFA would be around 164,000 m³ per year in year 5 (Assuming existing capacity be the private sector of some 56,000 m³). The final gap to be covered in year 7 would be 309,000 m³/year.

This volume of timber should needs to be harvested and transported with additional resources by the private sector under NFA supervision.¹⁰

If we assume teams of 3 forest workers (2x fellers plus 1 x skidder driver) with an annual capacity of 9,360 m³ annually, some 17 teams would be needed by the SP in year 5 and some 33 in year 7. Each team would need the following equipment and investment (assuming good quality equipment).

Table 22: Title: Equipment and investment needed for timber harvesting and transporting services by private sector

Equipment	Unit prize in EUR	No.	Total EUR
Harvesting Team			

¹⁰ NFA will be responsible for marking trees, developing annual action plans, and coordinating with private sector actors.

1 tractor with winch	150,000	1	150,000
Tree felling lever	50	3	200
Felling wedge	10	6	100
Felling Axe	100	3	400
Off road car	30,000	1	30,000
Chainsaw	1500	3	4,500
Protection equipment	450	3	1,800
Total per team			184,000
Total for 17 teams			3,128,000
Total for 33 teams			6,072,000
Transport Team			
Dump Loading Truck Ural	70,000	1	70,000
MODERN OFF ROAD truck 3 axes - incl. crane	150,000	1	150,000
Total per team			220,000
Total for 17 teams			3,740,000
Total for 33 teams			7,260,000

Source: Own elaborations

3.2 Investment needs in low impact and resilient forest road construction

Since the timber can only be harvested with additional investments in roads, the private sector needs to invest in this section. Planning will be conducted by NFA to ensure a well-planned, low-impact and effective road network can be developed (see Feasibility Study Chapter 5.2 and 6.3 for more information on the capacity building needs for NFA to enable low-impact and resilient road construction).

We assume a capacity by NFA of some 2,898 ha annually by 7 equipped NFA teams.

According to the Forest Model we estimate a total need in forest road construction of 13,000 ha per year. Since only roughly 2,900 ha can be managed by equipped NFA teams, the gap for private sector would be the investment to build capacity for some 10,000 ha (rounded figure) road construction annually.

Table 23: Title: Equipment and investments needed for service providers in forest road construction

	Ha/yr	Capacity in ha per team/yr	Teams needed
New forest roads and skidding road building	13,000	414	31
NFA capacity	2,900		7
Capacity gap for private sector	10,100		24

Source: Own elaborations

Table 24: Equipment investment needs per team

Equipment	Unit price EURO	No needed	Total cost per team
Bulldozer	250,000	0.5	125,000
Excavator	250,000	1.0	250,000
Road Roler	120,000	0.5	60,000
Grader	150,000	0.5	75,000
Truck	70,000	2.0	140,000
Off road car	30,000	1.0	30,000
Protective clothing	250	3	750
Total			680,000
Total 24 Teams			16.320.000

Source: Own elaborations

The total investment need (harvesting and road construction) would sum up to EUR 23 million to cover the harvesting volume in year 5. For the total harvesting volume in year 7 a total of EUR 29 million would be required (see Table 25).¹¹ This can only be done if NFA gives long term contracts to the private sector with a guarantee for a stable contracting.

Table 25: Number of staff for specialized private sector contractor teams within the eight target districts, and the cost for equipping each team

Measures	Number of teams (#)	Number of staff (#)	Equipment (GEL)	Equipment (Euro)
Cutting Operations: Tending, Thinning and final harvest	33	98	18,094,560	6,072,000
Timber transport	33	98	21,634,800	7,260,000
Road building	24	72	48,633,600	16,320,000
Total	-	270	88,362,960	29,652,000

Since the private sector does not have access to the bank credits for forest works, it is recommended to establish a guarantee fund to allow the private sector to invest.

It should also be considered if the Government or the private sector could invest in a modern machine park, where the private sector could rent machines at a market prize. The advantage would be that not every team needs to be the full set of equipment and could invest step by step in their own machines.

¹¹ Note: rounded figures used.

REFERENCES

State Audit Office. 2016a. Social Utilization of Forest Wood Resources. Tbilisi, Georgia.

State Audit Office. 2016b. Performance Audit of Forest Commercial Resource Management. Tbilisi, Georgia.

ANNEXES

Annex 1: Private forests

With the New (draft) Forest Code, also private property rights of forests were allowed (Georgian Patriarchate and natural or legal persons). However the transfer of ownership to the private sector has not occurred. Today, 100% of forests are owned by the state (state forest fund - SFF). The new draft Forest Code (version from January 2019) regulates forest ownership as follows: *the forest ownership right is inseparable from the land ownership right. Forest of Georgia may be in state or private ownership* (article 5, paragraph 1). Therefore, this law also permits private property rights to forests. However, paragraph 3 of the same Article specifies: *private forest is a part of forest of Georgia located on a land plot owned by a physical person or a legal entity; in accordance with this record*. If this law will be adopted in this version, forests may also be owned by the private sector in future.

The draft law however establishes the following regulation for assigning to the area naturally afforested on a private land the private forest status:

- *With the initiative of the private owner or the motion of the Ministry in agreement with private owner and based on the conclusion of the Commission, the Government of Georgia makes decision on assigning the status of a private forest to the private territory, if the area was regenerated naturally and meets the forest definition of this Code (Article 12, paragraph 2);*
- If private forest owner substantiates higher interest to use the territory for other purposes, the territory shall not be assigned the status of a private forest. This right of the private owner does not apply to the area of at least 5 ha, where the average age of woody plants has reached 20 years (article 12, paragraph 3).

Annex 2: Examples of technical equipment

Figure 9: Example of technical equipment (not complete)



Figure 10: Example of technical equipment for road construction (not complete)



Figure 11: Example of needed technical equipment for skidding and loading (not complete)

Special machinery for skidding and loading



527 Track Skidder



Example



Track Loader



https://www.cat.com/en_US/by-industry/forestry/logging.html
<https://www.tigercat.com/product/635g-skidder/>

Figure 12: Example of personal protection equipment

For woodcutter
High quality safety equipment



299,00 €



299,00 €



129,99 €



22,99 €



229,00 €



49,99 €



349,00 €

Total for 1 pers =1379,00 €

Example



<https://www.husqvarna.com/de/>
<https://www.husqvarna.com/ge/>

Figure 13: Example of personal protection equipment

Example
For other personals of Logging groups (5 person)



or

119,00 €



69,99 €



99,99 €



24,99 €



69,99 €

Total for 1 pers = 384,00 €



<https://www.husqvarna.com/de/>
<https://www.husqvarna.com/ge/>

Figure 14: Example of forestry equipment

Example Forestry Equipment



Hookaroon



Tree Felling Lever



Felling Wedge



Forest Axe



Handle Bush Hook



Maasdam Pow'R-Rope Puller

<https://www.forestry-suppliers.com/index1.php>

Figure 15: Example of tree planting tool

Tree planting tools



Pottiputki No 75 Planter



Planting Bag Harness System

<https://www.forestrytools.com.au/index.php?id=27>

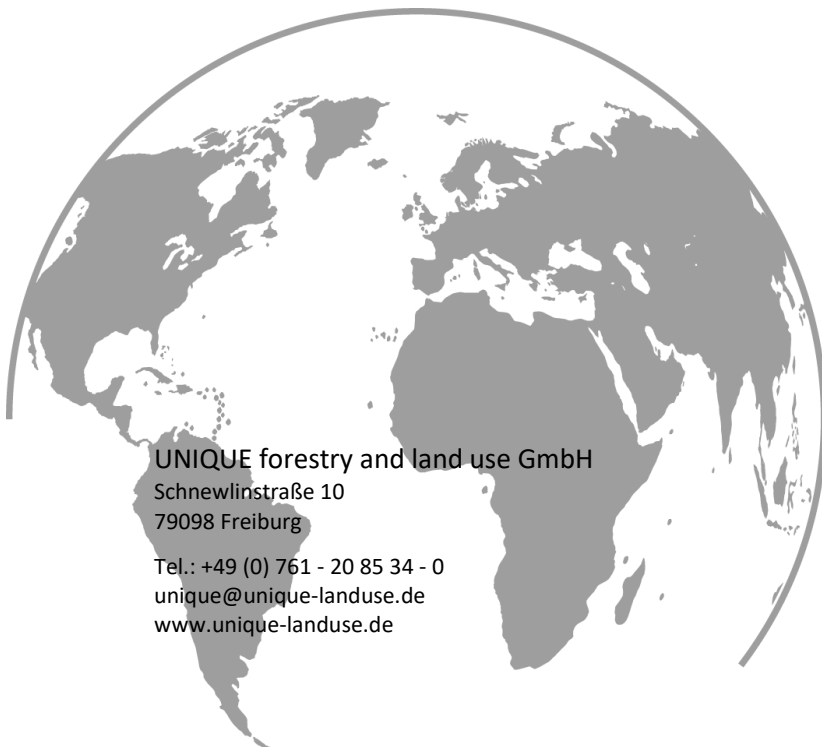
Example



Tree Planter



<https://www.whitfieldforestry.com/products>



UNIQUE forestry and land use GmbH
Schnewlinstraße 10
79098 Freiburg

Tel.: +49 (0) 761 - 20 85 34 - 0
unique@unique-landuse.de
www.unique-landuse.de