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Issyk Kul, Kyrgyzstan

Forest Congress for the Caucasus and Central Asia

Summary report



UNECE



**Food and Agriculture
Organization of the
United Nations**



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List of Abbreviations

C&I	Criteria and Indicators
CAMP4ASB	Climate Adaptation and Mitigation for Aral Sea Basin (World Bank project in Central Asia)
CCA	Caucasus and Central Asia
ERS	Earth Remote Sensing
FAO	Food and Agriculture Organization of the United Nations
FLR	Forest Landscape Restoration
FTS	Joint UNECE/FAO Forestry and Timber Section
GIS	Geographic Information Systems
IUCN	International Union for Conservation of Nature
NFI	National Forest Inventory
NFC	National Forest Concept
ROAM	Restoration Opportunities Assessment Methodology
RS	Remote Sensing
SAEPF	State Agency on Environment Protection and Forestry of Kyrgyzstan
SDGs	Sustainable Development Goals
SFM	Sustainable Forest Management
SNCO	State Non-Commercial Organization
SoCCAF	State of Forests of the Caucasus and Central Asia (publication)
UNDA	United Nations Development Account
UNECE	United Nations Economic Commission for Europe
NDC	Nationally Determined Contribution
GIZ	German Corporation for International Cooperation



1 Summary

The Caucasus and Central Asia's land area of 419 million hectares is almost equivalent to the size of the European Union, forests cover a relatively small share of only 6.5%, compared to 31% of the global average. The forests of the region, however, encompass a wide variety of forest types and ecosystems, ranging from mountains, plains and flood plains to steppes, semi-deserts and deserts. These forest types are important for the environment of the region, as they include highly diverse but also vulnerable ecosystems, and protect land against erosion and soil loss. Forests in the region also play an essential role in mitigating climate change, sequestering millions of tonnes of carbon dioxide and alleviating the impacts of extreme weather events. In addition, forests are a source of fuel, wood and income for the often poor, rural population.

The United Nations declared 2021–2030 the Decade on Ecosystem Restoration¹, which recognizes the importance of above-mentioned challenges and offers unparalleled opportunity to create jobs, address climate change, and improve food security.

The Forest Congress for the Caucasus and Central Asia, 28-31 May 2019, Kyrgyzstan, focused on three main topics: (i) national-level forest monitoring systems, (ii) the state of forests in the region, (iii) forest landscape restoration.

(i) National-level forest monitoring systems

The joint UNECE/FAO Forestry and Timber Section supported the development of national criteria and indicators sets for sustainable forest management through an inclusive participatory process in Armenia, Georgia, Kazakhstan, Kyrgyzstan and Uzbekistan. All five countries developed sets and are now in the process of their institutionalisation and implementation.

(ii) State of forests in the Caucasus and Central Asia

In 2019, the first-ever study on the state of the forest and the forest sector was published with the contribution of national experts from all countries. The challenges highlighted by the study were discussed at the Congress.

(iii) Forest Landscape Restoration

Azerbaijan pledged at the Forest Congress to restore 170,000 hectares of degraded and deforested land by 2030 under the Bonn Challenge and an additional 100,000 hectares conditional to funding. With this commitment, Azerbaijan joined six countries in the Caucasus and Central Asia (Armenia, Georgia, Kazakhstan, Kyrgyzstan and Uzbekistan) that declared their pledges at a Ministerial Roundtable in Kazakhstan in 2018, bringing the region's collective commitment to about 3 million hectares.

Country-specific recommendations for each of the three Congress topics can be found in the dedicated sections in this report.

¹ <https://www.decadeonrestoration.org/>



2 Background information

From 28 to 31 May 2019 the joint Forestry and Timber Section (FTS) of the United Nations Economic Commission for Europe (UNECE) and the Food and Agriculture Organization (FAO) of the United Nations in cooperation with the State Agency on Environment Protection and Forestry (SAEPF) of Kyrgyzstan held a 4-day **Forest Congress for the Caucasus and Central Asia** (CCA). It was attended by around 60 participants from ministries responsible for forestry and other forest-related institutions from all eight countries of the CCA region - Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. The list of participants is attached as Annex 2.

The objective of the Forest Congress for the Caucasus and Central Asia was to cover recent forest developments in the CCA region and showcase the national efforts and achievements in forest monitoring and landscape restoration to seek for further strengthening regional cooperation and outlining strategic common approaches for future projects. This implied reflecting on how to progress in highlighting and prioritising forestry issues on the national, regional and international agenda.

The Forest Congress focused on three main topics:

1. National-level forest monitoring systems;
2. State of forests of the Caucasus and Central Asia (SoCCAF); and
3. Forest landscape restoration (FLR).

The Agenda of the Congress is available in Annex 1.

National posters describing the forest sector in all eight countries of the Caucasus and Central Asia were prepared and exhibited over the whole period of the Congress. For the UNDA project countries the posters were based on country reports which can be found in Annex 3, posters for Azerbaijan, Tajikistan and Turkmenistan were prepared with the use of information reported for SoCCAF. The posters of Armenia, Georgia, Kazakhstan, Kyrgyzstan and Uzbekistan also showed the progress in developing the national-level sets of Criteria and Indicators (C&I) for Sustainable Forest Management (SFM).

The development of these national-level C&I sets is the result of a series of regional, national and local multi-stakeholder workshops held between 2016-2019 in the framework of the United Nations Development Account (UNDA) project - "Accountability Systems for Sustainable Forest Management in the Caucasus and Central Asia". The project is implemented by the joint UNECE/FAO Forestry and Timber Section (FTS), which is engaged in several projects in the Caucasus and Central Asia focusing on national and international forest monitoring, forest landscape restoration and support the development of forest policies and national strategies. The project builds upon existing processes and expertise in participating countries addressing country specific needs. It provides knowledge, capacity-building, training materials and advisory services for defining the scope and relevance of the information that is needed for the implementation of sustainable forest management at the

national level to support evidence-based policy making. The duration of the project is from June 2016 until September 2019².

The UNDA project aims through training and policy advisory services to strengthen the national capacity of five target countries (Armenia, Georgia, Kazakhstan, Kyrgyzstan and



Figure 1: Steps of the UNECE/FAO, UNDA year capacity-building project “Accountability Systems for Sustainable Forest Management in the Caucasus and Central Asia”.

Uzbekistan) to develop national criteria and indicators and reporting, or accountability systems, for sustainable forest management. The project is expected to enable the target countries to actively participate in international processes related to forests and contribute to the sustainable development of the sector towards a green economy. National criteria and indicators for SFM will serve as a

tool to communicate the relevance of forests to the environment as well as socioeconomic situation at national, regional and international levels. Criteria and indicators can be used for monitoring the status and trends in the forest sector at a national level and eventually monitoring progress towards the Sustainable Development Goals (SDGs).

On the first day at the Forest Congress, countries of the UNDA project presented information about the development of their C&I sets, the process and the actions that will be undertaken to implement the C&Is and promote sustainable forest management. The criteria and indicator sets are finalized in all project countries except Armenia. It is expected that most of them will be formally approved in the year 2019. In **Armenia** the finalization of the national C&I has been delayed due to the structural changes that have affected the forest sector in recent years - forests, which were formerly under the auspices of the Ministry of Agriculture, are now the responsibility of the Ministry of Nature Protection. In **Georgia**, the national set of C&I, which is aligned with the ongoing national forest inventory (NFI) and referred to in the newly developed Forest Code is finalized and further work is being carried out on the development of specific reporting guidance and measurement units for each indicator. In **Kazakhstan**, the national C&I set was submitted to the Chairman of the Committee of Forestry and Wildlife of the Ministry of Agriculture for formal approval. However, with the creation of the Ministry of Ecology, Geology and Natural Resources in June 2019, which assumed the

² The project was extended until September 2020.



functions of several ministries including those of the Ministry of Agriculture, the further work on C&I will be continued within this new ministry.

In **Kyrgyzstan**, the national set was finalized based on the further local consultation workshops to ensure wider stakeholder involvement. In **Uzbekistan**, the final version of the set is to be approved by the Government, for which the draft resolution “on the implementation of the developed criteria and indicators for sustainable forest management in practice” has been prepared.

On the second day, three recently published reports were presented at the Congress and, in parallel, in Geneva. ***The State of Forests of the Caucasus and Central Asia***³ study is the first international publication to provide a full report of forest resources and the forest sector in the region, including major challenges faced by the sector and possible policy responses. The ***Guidelines for the Development of a Criteria and Indicator Set for Sustainable Forest Management***⁴ describe tools needed to advance the monitoring of forests and provides a practical approach in developing national monitoring systems for forests. The ***Forest Landscape Restoration in the Caucasus and Central Asia***⁵ study analyses key drivers of forest degradation and assesses the potential for forest landscape restoration in the region.

In recent years, countries in the Caucasus and Central Asia have made significant progress in developing national forest monitoring systems and have committed to implement large-scale forest landscape restoration. The Astana Resolution and the commitments of the region in 2018 to restore about 3 million hectares of forests under the Bonn Challenge by 2030 were major milestones in this regard⁶.

The third day of the Congress was jointly organized by UNECE/FAO and IUCN and dedicated to Forest Landscape Restoration. The road to implementation of FLR and to fulfill the country pledges towards the Bonn Challenge and Astana Resolution⁷ as well as funding opportunities were discussed. Countries presented their forest landscape restoration projects and approaches as well as their strategies to implement their Bonn Challenge pledges by 2030. Azerbaijan announced its pledge of 170,000 ha and an additional 100,000 ha conditional to further funding under the Bonn Challenge at the Forest Congress thus joining the six countries in the Caucasus and Central Asia (Armenia, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan), bringing the region’s collective commitments under the Bonn Challenge to about 3 million ha.

The Bonn Challenge was launched in 2011 by the Government of Germany and IUCN, and extended by the 2014 New York Declaration on Forests. It is a global effort to bring 150 million ha of deforested and degraded land into restoration by 2020, and 350 million ha by 2030. The CCA countries face challenges with degradation and overutilization of forest areas. The FLR

³ <http://www.unece.org/index.php?id=51705>

⁴ <http://www.unece.org/index.php?id=51695>

⁵ <http://www.unece.org/index.php?id=51698>

⁶ http://www.unece.org/fileadmin/DAM/timber/meetings/2018/20180621/Astana_Roundtable_Summary_Report_ENG.pdf

⁷ http://www.unece.org/fileadmin/DAM/timber/meetings/2018/20180621/Resolution_ENG.pdf



approach under the Bonn Challenge provides an overall framework to enhance national restoration efforts and regain forest services to benefit people and nature.

On the fourth day of the Congress, participants were invited to a field trip to a nursery of the Issyk Kul local forest department, an apple orchard which is an example for a public-private partnership (state land leased to private investor) as well as to the Grigoriev Gorge, where the World Nomad Games were held in Kyrgyzstan three times in a row since its inception, and where some FLR areas and *Picea schrenkiana* forests were visited as well.

The Congress was highly interactive, featuring presentations, exercises, and group work with input from peers and international experts.

The Forest Congress for the Caucasus and Central Asia was a major step forward to address the challenges of achieving the United Nations Sustainable Development Goals, the objectives of the United Nations Strategic Plan for Forests and other international objectives and processes relevant to forests.

3 Opening

The Forest Congress for the Caucasus and Central Asia was officially opened by **Mr. Eldiar Sheripov, Deputy Director of the of the State Agency on Environment Protection and Forestry of Kyrgyzstan**. On behalf of the Government of Kyrgyzstan, Mr. Sheripov welcomed the participants to Sary Oy, Issyk Kul and wished the delegates productive work.

Mr. Ekrem Yazici, Deputy Chief of FAO/UNECE joint Forestry and Timber Section, thanked Mr. Sheripov for welcoming participants at the Forest Congress and said that it is an honour to be invited to the Kyrgyz Republic and hold the first regional meeting under the UN Development Account Project in Central Asia. He highlighted the importance of forest monitoring systems and forest landscape restoration in the region in the light of the upcoming UN Decade on Ecosystem Restoration and stated that UNECE and FAO are ready to support countries in their efforts.

The preliminaries covered introductions, rationale, objectives, expected outcomes and an overview of Congress topics, agenda, rules and norms as well as introducing the Congress flow and components (see below).



Figure 2: Workflow of the Congress.

Mr. Tamer Otrakcier provided an overview on linking C&I to national forest strategies to set the context. He described the SFM C&Is as a tool for enhancing SFM from policy to practice and covered the models of implementation which are different from one country to another. He also presented how the C&I should be linked to national forest management and strategic plans.



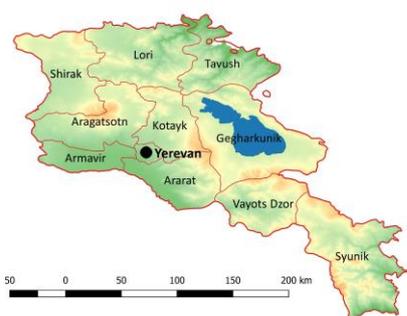
4 Forest Monitoring

4.1 Presentations on criteria and indicators

The five project countries provided information about the development of their national criteria and indicator sets and the process. The presentations were structured similarly and covered forest country overviews, the rationale, lessons learned and challenges. The countries also described the actions that will be undertaken in their countries to implement the C&I set and promote sustainable forest management.

Some highlights from the presentations:

4.1.1 ARMENIA



Forest cover: 11.2%
Forest area: 332,000 ha (GIZ,2014)
Restoration needs: mining sites, forests in steep terrain
Restoration potential (preliminary estimate):
 100,000 ha
Country target for afforestation/forest restoration:
 266,500 ha by 2050

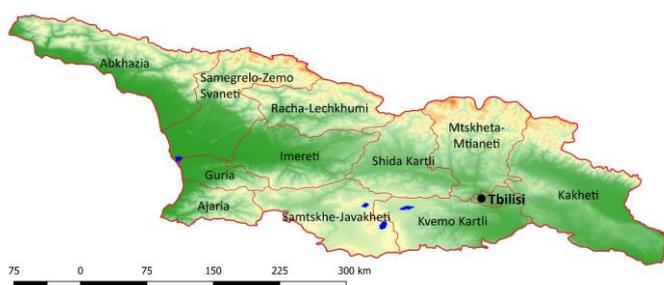
In his presentation, **Mr. Areg Karapetyan, national focal point of the UNDA project and Director of “Hayantar” State Non-Commercial Organization (SNCO), Armenia** emphasized the high significance of forest ecosystems in Armenia from environmental as well as social and economic points of view. The forest lands in Armenia are under exclusive state ownership. According to the forest inventory results from 1993, the forest cover of the country is about 332,000 hectares or approximately 11% of the country's total area. Forests are mostly located in the southern and north-eastern parts of the country. Around 75% of forests are managed by “Hayantar” SNCO (Armforest), and 25% of forests are managed by the agency of protected areas. Broadleaf, coniferous and arid open wood forests are the main types of forests in Armenia, dispersed according to elevation, soil conditions and other natural climatic conditions. Broadleaf forests account for more than two-thirds of all forests in the country. Broadleaf forests consist primarily of beech, oak, hornbeam and coniferous forests consists of pine, besides open wood forests, where the dominant species is juniper. Forests in Armenia are valuable not only because of their biodiversity, but also for the ecosystem services they provide.

In recent years, Armenia has gone through structural changes that have affected the forest sector. Forests, which were formerly under the auspices of the Ministry of Agriculture, are now the responsibility of the Ministry of Nature Protection, together with areas dedicated to nature conservation. These changes allow for a harmonized and more efficient system for forest monitoring and management, and they create momentum for finalizing the national-level set of criteria and indicators for sustainable forest management. The establishment of a

non-formal technical working group was initiated by the Ministry of Nature Protection and the project focal point. The set, which has been developed through a multi-stakeholder process - about 30 national experts on forests and related spheres (from government, academia and NGOs) were involved - strives to transparently measure Armenia's progress in achieving national forestry targets, including the reduction of illegal logging and the protection of forests and forest lands, and thus it supports evidence-based policy making. While describing the challenges in developing the C&I set, Mr. Karapetyan noted that the development of the C&I for SFM by itself is considered a continuous process that cannot be accomplished by a single project. The process, which started in late 2016, is still ongoing. The main discussion was around the optimal number of indicators. The main requirements that were used during the selection of the C&I thematic elements were to articulate the strategic areas, important to monitor, specific to the forestry sector of the country. 74 initially selected indicators were reduced to 47. Priority indicators for Armenia are grouped under (1) forest cover, (2) biodiversity and (3) climate change. For the future, a working group will be established, and specific experts will be involved to finalize and operationalize the set. At the same time, Mr. Karapetyan noted that it is imperative to consider the capacity of the country to monitor C&I. SEMAFOR⁸ (System for the Evaluation of the Management of Forests) will be considered as a tool for measuring SFM.

The major constraint towards achieving the best results is a lack of a monitoring and evaluation procedure for evidence-based decision-making, transparency and accountability. There is a policy gap: no single state body is in charge of monitoring. The establishment of a monitoring and accountability system, which will ensure a stable flow of information, is urgently needed. Thus, the next steps in this direction will be finalization and adoption of the national level C&I set for SFM in Armenia.

4.1.2 GEORGIA



Forest cover: 40.5%

Forest area: 2.8 million ha

Restoration needs: Forests throughout the country, priority on the region around the city Borjomi (Samtskhe-Javakheti)

Restoration potential (preliminary estimate): at least 200,000 ha

Country target for afforestation/forest restoration: 9,000 ha (unconditional) and an additional 35,000 ha if funding is available. SFM practices on 45,000 ha (unconditional) and up to 250,000 ha conditional. Put 1 million ha of forests under protection by expanding the protected area from 0.52 million ha to 1.3 million ha¹¹.

In his presentation, **Mr. Carl Amirgulashvili, Ministry of Environmental Protection and Agriculture of Georgia** gave a brief overview of the forest data in Georgia:

- Around 40% of Georgia is covered by forest (2.8 million ha);
- Most of the forest is mountain forest;
- Around 80% of the country's forest has important protective functions;
- The Georgian forest is of natural origin, only 2.6 % is planted forest;

⁸ <http://www.unece.org/index.php?id=45451>



- Nearly 8.6% of Georgia (595,963 ha) is declared as protected areas, of which 45% (267,000 ha) is covered by forest;
- The conservation of biodiversity is considered in the management of forest areas outside the protected area system;
- In Georgia, the Emerald Network (an ecological network of areas of special conservation interest, launched by the Council of Europe as part of its work under the Bern Convention) consists of around 800,000 ha of State Forest Fund;
- Only around 20% (587,500 ha) of Georgia's forests were reported in 2015 as 'forest area available for wood supply'.

Mr. Amirgulashvili also noted that in Georgia, the need and potential of C&I for SFM was recognized as being a useful tool to measure progress made towards achieving the national goals of SFM defined in the National Forest Concept (2013), which is a forest policy document. Also, the development of C&I is seen as a way of engaging a wide range of stakeholders in the forest sector reform. The National Forest Concept of Georgia recognizes that Georgia's forests are an important foundation for the ecological, social and economic development of the country. Mr. Amirgulashvili noted that most of the criteria are reflected in the newly developed Forest Code (2019) and that there is a reference to the C&I set. Irrespective of their form of ownership, Georgia's forests shall be managed based on a system established in accordance with the principles of sustainable development. This will ensure the improvement of quantitative and qualitative parameters of Georgia's forests, protection of biodiversity, rational use of the economic potential of the forest taking into consideration its ecological value, public involvement in forest management and access to forest resources. The criteria and indicators will enable the monitoring of forest resources and reporting on the state of the forest in Georgia.

Mr. Amirgulashvili gave an overview of activities that were undertaken to develop the national C&I set. The development process of C&I for SFM started in the framework of the National Forest Programme (NFP) process with the support of Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) in 2014. Eleven NFP working group meetings (supported by GIZ) and four UNECE/FAO workshops have been conducted since 2014, involving participants from the Government, NGOs and academia. Besides, the Biodiversity and Forestry department of the Ministry of Environmental Protection and Agriculture of Georgia and international consultants have performed intensive deskwork to develop the set of national C&Is. Between 2014 and 2016, policy and management level C&I were determined and 5 guiding principles of SFM have been agreed (ecological, economic, social, multifunctional, transparency). In addition, the common understanding on ecosystem-based forest management (close to nature, sufficiency and precaution) has been formed. Since 2016, the ecological, economic and social principles were further specified through the development of related criteria and indicators.

The key challenges were to develop economic and social indicators that would be feasible and measurable. The selection process of criteria and respective indicators was a complex process. More than 100 indicators were elaborated. For this moment, around 94 indicators are under consideration. The determining factors for screening the indicators were the

following: feasibility, meaningfulness, relevance, credibility, measurability, international comparability.

Mr. Amirgulashvili identified the following points as lessons learned: the importance of stakeholder participation; reaching a common understanding of SFM; reviewing of relevant regional and international C&I processes and sets; evaluation of potential indicators against requirements like feasibility, data quality, etc.

For the institutionalisation and operationalization of the national-level C&I set, the following steps will be undertaken:

- The adoption of national C&I by the order of Minister in 2019;
- Development of explanatory notes (fact sheets) for each indicator;
- Development of the software module for reporting on national C&I and its integration in to the Forest Information and Monitoring System (FIMS).

He also listed the actions to be undertaken to implement the C&I and promote sustainable forest management as follows:

- The adoption of the new Forest Code in 2019 by the parliament; The adoption of national C&I by the order of Minister in 2019;
- Consideration of national C&I in the respective legal regulations during 2019 -2020;
- Establishment of the Forest Information and Monitoring System (FIMS) during 2019 – 2022;
- Implementation of the first National Forest Inventory between 2019 – 2021;
- Implementation of Forest Management Level Inventories and elaboration of Forest Management Plans.

4.1.3 KAZAKHSTAN



Forest cover: 1.2%
Forest area: 3.3 million ha
Restoration needs: saxaul wooded land and forests¹⁵, in particular on the dry bed of the Aral Sea and in tugai forests
Restoration potential (preliminary estimate): saxaul wooded lands (up to 8.9 million ha, if the entire former natural range were restored) and tugai forests
Country target for afforestation/forest restoration: 200,000 ha of wooded land and forests until 2020; and 300,000 ha of wooded lands and forests by 2030. In addition, it is planned to establish plantations of fast-growing trees, create green belts around cities, plant 10,000 ha of shelterbelts and set up protected areas for saxaul woodlands on 962,021 ha by 2030.

Mr. Maxat Yelemessov, Head of Forestry and Protected Areas Unit, Forestry and Wildlife Committee, Ministry of Agriculture, Kazakhstan, presented the process of developing the national-level set of C&Is, as well as the final version of the set. During the presentation, he gave information about the forest cover and forest types in the Republic of Kazakhstan, as well as the distribution of forest land area in the territory of the State Forest Fund of the



Republic of Kazakhstan by prevailing species. As of 01/01/2019, the total area of the state forest fund is 30,056.7 thousand hectares and covers 11.0% of the territory of the republic. The largest part of the state forest fund - 74.7% is under the jurisdiction of the regional akimats, 24.6% is under the authority of the Committee on Forestry and Wildlife under the Ministry of Agriculture.

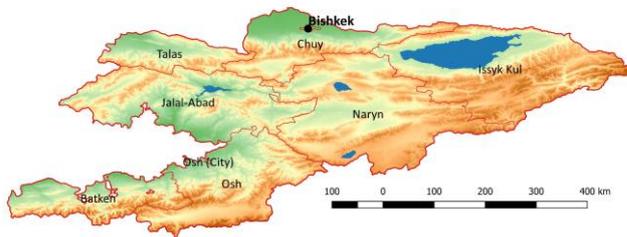
Further, an overview of actions taken in the country for the development of national criteria and indicators for sustainable forest management was provided.

Mr. Yelemessov noted that in the process of preparing national indicators, the Pan-European and Montreal Processes regional C&I sets were introduced, of which the Montreal Process indicator set was selected as the most appropriate for Kazakhstan. The state bodies responsible for the state forest fund, regional akimats, state forestry institutions, non-governmental organizations were involved in the C&I development process. There was practically no experience in developing indicators among stakeholders prior to the start of the project as the C&I set was developed in Kazakhstan for the first time. During the discussion at national and local seminars, the specialists were introduced to new approaches, best international practices and developed a unified national approach. Since the Montreal Process indicator set (25 indicators) was taken as a basis at the initial stage, an excessive number of indicators were proposed. These were initially reduced to the 17 indicators most acceptable for Kazakhstan and eventually 13 indicators were prepared for approval. They were prioritized in accordance with the national forest legislation. During the screening of indicators, among other factors, availability of methodologies and assessment possibilities as well as applicability in Kazakhstan were considered as important.

Mr. Yelemessov identified the strategic areas in the field of forestry in Kazakhstan and noted that the priorities for Kazakhstan are the development of private forest management; creating green areas around regional centers; and introduction of new technologies to combat forest fires, pests and forest diseases. Future support needs include methodological support for some indicators. An NFI is necessary but not currently planned.

As to the next steps for the institutionalisation, Mr. Yelemessov explained that the C&I set will be approved by the order of the Chairman of the Committee for Forestry and Wildlife of the Ministry of Agriculture of the Republic of Kazakhstan and registered with the Ministry of Justice. Now the new Ministry of Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan is responsible to advance the C&I institutionalization.

4.1.4 KYRGYZSTAN



Forest cover: 3.2%
Forest area: 637,000 ha
Restoration needs: walnut and wild fruit forests, forests in the Jalal-Abad (Chatkal district) and Talas provinces due to widespread mining activities.
Restoration potential (preliminary estimate): 160,000 ha of spruce and juniper forests
Country target for afforestation/forest restoration: 83,000 ha by 2025

Ms. Suizanna Seideeva, National Consultant, UNECE/FAO, UNDA project, Kyrgyzstan described the Kyrgyz Republic as a low-forest-cover country where existing forests play mainly a role for conservation. Traditionally there are four major forest types in Kyrgyzstan: spruce forests, in the western and central areas, and the Fergana valley; walnut-fruit forests in the south; juniper forests in different parts of the country; and riverside (tugai) forests. The main activity of the forest sector is to increase the area covered by forests and to protect existing forests, as well as conserving forest biodiversity.

Further, an overview of actions, taken in the country for the development of national criteria and indicators for sustainable forest management was provided. Similar to all other project countries, two national workshops were held with the participation of all stakeholders. Besides, Kyrgyzstan organized advisory workshops at the local level in the Jalal-Abad oblast (March 2018) and Talas oblast (November 2018) with the participation of forest users and *leshozes* (forestry enterprises). At these workshops, the emphasis was on the necessity of data collection and on the role of forest users in forest management. From the local consultations, recommendations were received to include an indicator on wildlife and to integrate SDG and biodiversity indicators into the set.

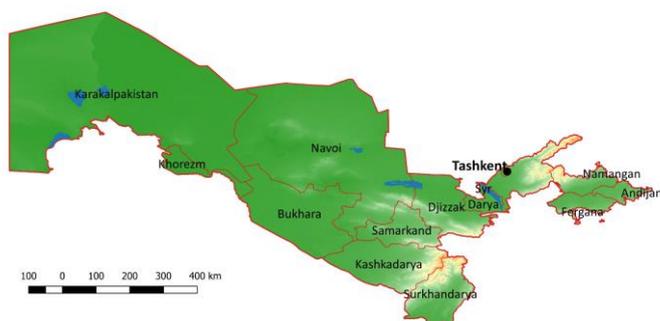
The selection of indicators was not a simple process. The determining factors for screening the indicators were the availability of data, cost-effectiveness and relevance. Initially, 41 indicators were developed under six criteria. During the local consultations, the number of indicators increased and eventually 54 indicators were included in the final C&I set.

During the development process, it was found that earlier work was carried out to define criteria and indicators in walnut and juniper forests, but there was no institutionalization process. In the long-term plan of the State Agency on Environment Protection and Forestry of Kyrgyzstan (SAEPF), criteria and indicators were determined that describe mainly the state of natural ecosystems.

When speaking about the challenges for implementing C&I for Sustainable Forest Management, Ms. Seideeva noted the difficulty to obtain reliable data on the activities of forest users.

The national C&I set should be used by the republican forestry management body for annual reporting and for determining follow up actions.

4.1.5 UZBEKISTAN



Forest cover: 7.2%

Forest area: 3.2 million ha

Restoration needs: Tugai forests, followed by saxaul woodland and forest, particularly on the dry bed of the Aral Sea

Restoration potential (preliminary estimate):

Saxaul woodland and forest (up to 9.7 million ha, if all of the land where saxaul once occurred naturally were restored) and mountain forests, in particular pistachio

Country target for afforestation/forest restoration:

As of 2019 Uzbekistan plans to plant 500 thousand ha per year.

Mr. Abduvokhid Zakhadullaev, State Committee on Forestry, Uzbekistan noted that in Uzbekistan, forests, like in other Central Asian countries, possess mainly a protective function and play an important role in combating desertification, preventing erosion and other natural disasters, as well as protecting irrigated agricultural lands and pastures from degradation. They have a significant impact on other sectors of the national economy, such as agriculture, livestock and water conservation. He also mentioned that HE Shavkat Mirziyoyev, President of Uzbekistan pointed during a 2017 message to Parliament that there is a need to develop criteria and indicators for assessing the effectiveness of state bodies in Uzbekistan.

Mr. Zakhadullaev gave an overview of activities conducted in Uzbekistan to develop a national C&I set. Besides the project's regional and national meetings, a delegation of Uzbekistan participated in the joint 75th session of the UN Economic Commission for Europe (UNECE) Committee on Forests and the Forest Industry (COFFI) and the 39th session of the Food and Agriculture Organization of the UN (FAO) European Forestry Commission (EFC), which convened from 9-12 October 2017, in Warsaw, Poland. A selection of key indicators from the initial 211 indicators under 26 criteria was presented there. The list was reduced to 49 proposed indicators under 14 criteria based on the comments received. Later many indicators were moved to sub-indicator level based on the recommendations from the experts.

Mr. Zakhadullaev noted that, in May 2019, the final list of C&I, containing 37 indicators under 7 criteria, was sent to ministries and agencies to receive their feedback. Mr. Zakhadullaev noted that the lack of experience in the elaboration of C&I among relevant specialists determined the low feedback from related ministries and agencies. He also pointed out that they will require methodological support.

As to the next steps for the institutionalisation, Mr. Zakhadullaev noted that a draft Resolution of Cabinet of Ministers is prepared. A final workshop will be organized to decide on the further steps that should be undertaken for the institutionalization and operationalization of the C&I set at the national level.

4.2 Peer review of national C&I sets

After the country presentations, all participants (except the presenting team in each case) individually assessed the performance of the country with regards to developing appropriate

C&I processes and outcomes using the target scoring method which had the following 4 criteria:

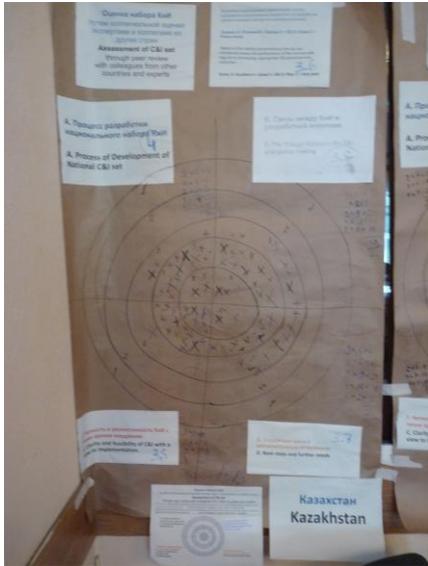


Photo: Target scoring sheet for Kazakhstan

1. The process of Development of National C&I set Stakeholders involvement. *Has the approach taken by the country allowed for the consultative process to develop a C&I set in a participatory way?*

2. The linkage between the C&I and policy making *The set has the potential to provide feedback to forest policy makers and promote incentives for the transition to sustainable forest practices; strengthen dialogue with other sectors and demonstrate the contributions of forests to sustainable development and the well-being of society; and monitor and report on progress towards SFM.*

3. The clarity and feasibility of C&I with a view to implementation

Coherent set, overlaps removed, gaps filled, clear, measurable, feasible, balanced among the criteria.

4. The next steps and further needs

Does the country have a clear understanding of the

next steps required and the needed further support?

If a low score was given (e.g. 3 and below when 5= Excellent; 4 = Good; 3 = OK; 2= Poor; and 1 = Very poor) it was obligatory to provide an explanation for the low score and provide recommendations to address the limitation. The experts gave summing-up comments based on the criteria, identifying strengths/limitations and provided recommendations.

Progress in the development of the C&I set was visible since the last regional meeting (2018). The difference among the country scores was not big. Horizontally, the task with the lowest score, and hence the most challenging for the countries proved to be “Clarity and visibility of C&I with a view to implementation”. The process of the development of the sets including different methods, like the involvement of stakeholders, was ranked highest.

Below is the combined table showing the scores.



Оценка набора КИИ
путь коллегияльной оценки экспертами и коллегами из других стран

Assessment of criteria indicator set
through peer review with colleagues from other countries and experts

Оценка: 5=Отлично 4=Хорошо 3=Удовлетворительно 2=Плохо 1=Очень плохо
Score: 5=Excellent 4=Good 3=OK 2=Poor 1=Very poor

Countries Страны	A. Процесс разработки национального набора КИИ A. Process of Development of National C&I Set	Б. Связь между КИИ и разработкой политики B. The linkage between the C&I and policy making	Г. Неточность реалистичности КИИ Г. Clarity and feasibility of C&I with view to implementation	Д. Следующие шаги D. Next steps and further needs	Сумма средняя Total average
Armenia Армения	31	27	30	29	11.7
Georgia Грузия	39	38	35	34	14.6
Kazakhstan Казахстан	40	38	38	37	15.3
Kyrgyzstan Кыргызстан	32	32	25	28	11.7
Uzbekistan Узбекистан	31	30	28	31	12.0
Сумма Total	17.3	16.5	15.6	15.9	

The total scores assessing the national C&I sets at different stages of the project were combined in one table as shown below. At different periods, all countries went down to the last place, except Kazakhstan, which was also the only country to reach up to the first place twice, including at this Congress.

II. Обмен знаниями – национальные наборы КИИ
II. Sharing – national C&I set

ЛЕСА

Критерии оценок не всегда совпадают, потому что оценивались наборы на разных этапах их разработки. Поэтому для сравнения прогресса по странам мы дали только суммарные средние оценки.
The criteria for assessment the sets do not always coincide, that is why, only for the purposes of comparing the progress, we are showing the total scores.

Countries Страны	Всего 2016г. Региональная встреча Армении Total Regional Workshop Armenia, 2016	Всего 2018г. Региональная встреча Грузии Total Average Regional Workshop Georgia, 2018	Сумма 2019г. Конгресс по вопросам лесного хозяйства на Кавказе Центральной Азии, Кыргызстан Total Average Forest Congress for the Caucasus and Central Asia, Kyrgyzstan, 2019
Armenia Армения	31 (III-IV)	3.4 (III)	11.7 (IV-V)
Georgia Грузия	30 (V)	3.75 (I)	14.6 (II)
Kazakhstan Казахстан	33 (I)	3.1 (IV)	15.3 (I)
Kyrgyzstan Кыргызстан	31 (III-IV)	3.5 (II)	11.7 (IV-V)
Uzbekistan Узбекистан	32 (II)	2.7 (V)	12.0 (III)

Ms. Stefanie Linser, BOKU gave a presentation on *25 Years of Criteria and Indicators for SFM and Impacts of C&I processes*. In her presentation, she reviewed the success factors for C&I implementation such as political support; sufficient data; collaboration; innovative presentation for special target groups. She also discussed major impacts of C&I for SFM processes: discourse of SFM; science applications; monitoring & reporting on SFM; SFM practices; assessment of progress towards SFM; dialogue & communication.

Visioning Exercise and poster exhibition

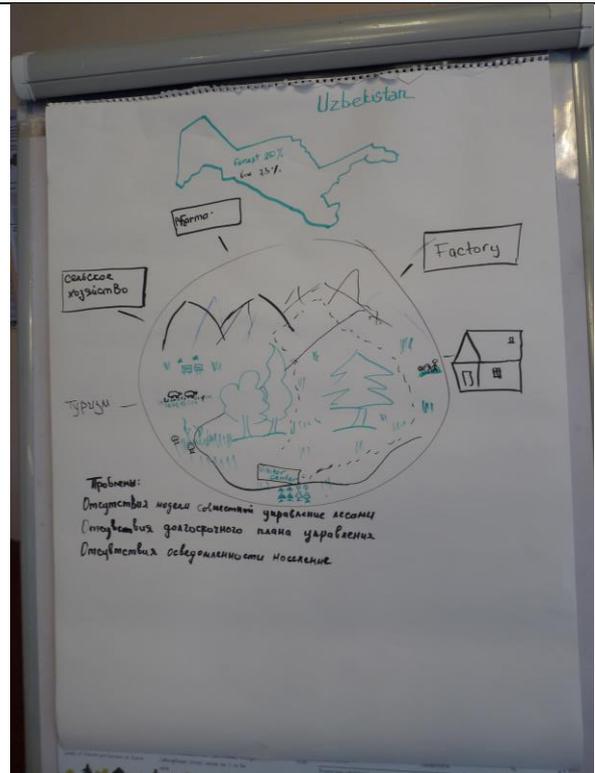
The day ended with a Country Visioning exercise of ideal sustainable forest management. The purpose of this visioning exercise was to provide a non-written insight into aspirations and perspectives. The participants were asked to draw their vision for SFM in their country using only pictures and then write down 2 or 3 top constraints to achieving this vision. UNDA project country groups then were given the concepts that they came up with in 2016, at the first regional workshop, for comparison and analyses.



Photo: One of the working groups presenting their vision of ideal SFM in Azerbaijan



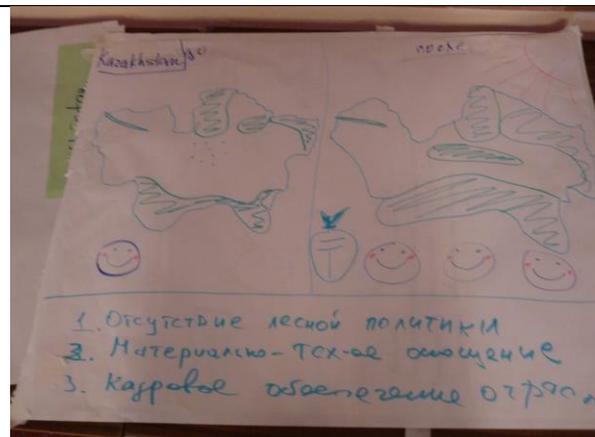
Armenia



Uzbekistan



Georgia



Kazakhstan



Kyrgyzstan



Tajikistan

The main conceptual, management and financial constraints as identified by the countries were as follows:

UNECE/FAO, UNDA project countries:

Armenia	Georgia	Kazakhstan	Kyrgyzstan	Uzbekistan
Lack of capacities	Communication	Forest policy	Regulations	Lack of models for joint management of forests
Climate Change	State funding	Financial and technical capacities	Institutional Reform	Lack of long-term management plan
No joint vision	Forestry Education	Qualified personnel provided to the field	Political Context	Lack of knowledge and awareness in local communities

Other CCA countries

Azerbaijan	Tajikistan
Forest inventory	Legislation, Regulations
Local population's vision of forest as unstable source of income	Lack of innovative technologies
Weak financing	Weak capacity



5 State of Forests of the Caucasus and Central Asia

5.1 Addressing challenges raised in the publication “State of Forests of the Caucasus and Central Asia”

Mr. Roman Michalak, UNECE/FAO, in his kick-off presentation noted that the objectives of the publication, the first regional overview of the forest sector, was to describe resources, sector, trends and pressures; describe policies and institutions; identify major challenges and policy responses; improve visibility and understanding of policy makers and international community; encourage regional dialogue and cooperation; improve the situation as regards to data availability and quality. He explained the process of the study, data sources and quality. He then introduced to the participants the structure of the study and briefly spoke about each section - background of the region, the regions forests in figures, services and goods provided by the forests, pressures on the forests, legal frameworks and policies, forest sector institutions, forest degradation and forest landscape restoration.

He summarized the main conclusions as follows:

- Forests of the region play an essential role in protecting against erosion and desertification, conserving biodiversity, supplying livelihoods and energy;
- Forests are under severe pressure, from the demand for fuelwood and grazing, leading to informal/illegal harvesting and forest degradation;
- A formal legal framework is in place, and policy goals articulated;
- Information is not adequate, so policy making is not evidence-based and there is little monitoring of progress;
- State forest organisations and their decentralised agencies play a key role;
- Forest management is mostly financed from the central budget;
- Resources (finance, human, know-how) are inadequate to demanded tasks.

Mr. Michalak noted that the study outlines the following main challenges for the region:

- Maintain and restore existing forests;
- Improve the information base: regular comprehensive inventories;
- Ensure information collected is considered in the policy making process, and its monitoring;
- Develop strategies for progress towards SFM and implement them fully;
- Decentralise decision making to the extent possible;
- Provide adequate education and training;
- Provide decent working and financial conditions for forest workers - improve attractiveness and prestige of forest professions;
- Strengthen forest sector institutions;
- Integrate SFM into national development strategies;
- Improve communication on forest issues, with policy makers and the public;



- Improve the organisation and coordination of international aid projects, avoiding duplication and fragmentation.

At the end of his presentation, Mr. Michalak thanked the national experts who contributed to the study, the main author Kit Prins, the whole UNECE/FAO team as well as the Swiss Confederation for financial support.

After the presentation, **national experts from all CCA countries** presented the state of forests, trends for the forest resources, forest products, markets and trade, policies and institutions, main challenges in the forest sector from the national perspectives of their respective countries.

Some highlights from the presentations:

Armenia wants to develop a communication strategy and highlighted that forest resources assessment is important. It is oriented on increasing the forest cover, improving the state of biodiversity conservation at ecosystem and species level, reduction of illegal logging, and thus supporting evidence-based policy making. It can also go along with the development of a new national forestry program and forestry sector reforms.

Azerbaijan is located in a semi-desert zone and has a large number of agricultural lands that requires watering. To increase and protect the country's forests from water and wind erosion and from droughts, it is necessary to increase the forest area in the next 20 years. Sound forest management and reforestation of degraded land reduces erosion, increases the stability of the slopes, and therefore supports basic environmental services such as regulated water flows and protection against natural disasters. The focus is on non-wood forest products (NWFP) as the forest cover is not high in the country. The perception changes from seeing forest only as a source of firewood to perceiving multifunctional forest use is the main priority for the country.

National perspectives and strategies:

1. Legislative initiatives and institutional changes (Forest Code, National Forest Program) - *The National Forest Program (NFP) (2015-2030) contains a National Forest Policy Statement and an Action Plan for the 2015- 2020 period;*
2. Improving the forest management system (forest inventory, long-term development plans for forestry enterprises, including considering climate change; monitoring);
3. Improving the efficiency of forestry work (realistic work planning, regulation of grazing and anthropogenic load);
4. Increasing the personnel potential of the industry (coursebooks that consider features of the country's forestry, advanced training);
5. Assessment of ecosystem services.

Georgia attaches big importance to the implementation of the first national forest inventory (NFI) which means that the country will get the first updated information about Georgian



forests. The NFI is seen as a mechanism for long-term monitoring and a means to introduce modern technologies. The National Forest Concept (2013) is Georgia's first national forest policy document. Improvement of the general condition and ecological functions of the forests, through the introduction of SFM in Georgia is on the agenda.

The major challenges for the forest sector were identified as follows:

- Imperfect legislation, weak forest management institutions, poor enforcement of law;
- High level of poverty in rural areas;
- Lack of affordable alternatives to firewood and pastures;
- Inadequate financing for the forest sector.

Forest sector policy targets are as follows:

Target 1. Improve the legal framework;

Target 2. Promoting the use of alternative fuel sources;

Target 3. Capacitate the forest policy, management and supervising entities;

Target 4. Enhance forest ecosystem services;

Target 5. Promote forestry education, ensure the public awareness raising.

Kazakhstan gave a brief overview of the forests of the country and identified the following challenges:

- Low material and technical equipment, and poorly developed infrastructure of forest sector entities;
- The lack of forest pathology service and forest fire-fighting equipment, which hinder the timely detection, localization and control of dangerous foci of forest pests and diseases, and forest fires;
- The unsatisfactory quality of the creation of forest crops and lack of maintenance for young forests.

Kyrgyzstan presented the national forest policy and legislation and gave information about the assessment of the forest policy in 2015-2017 in connection with the changes at the global and national levels. The contribution of the forest sector to the social and economic development of the country was presented in figures. Despite the insignificant forest cover, the forests of the Republic perform important ecological, economic and social-recreational functions. The need for a reform in the forest sector was presented and justified. Due to the lack of timber imports, overgrazing and population growth, the Kyrgyz forests are under pressure. The economic situation in Kyrgyz forestry is unsatisfactory, especially the lack of financial resources. The involvement of all stakeholders is not ensured in the current conditions.

Tajikistan like Azerbaijan also focuses on NWFP, mini-workshops on medical plants for the local population were organized; cross-sectoral cooperation would be necessary. It is imperative that forest ecosystem services are calculated and considered. Protecting and



conserving the few remaining natural forests from further degradation and destruction is a priority as well as managing these forests with an aim to sustainable production of fuelwood and a halt to the process of deforestation and degradation. Supporting the implementation of sustainable reforestation was identified as a major challenge.

Turkmenistan attaches big importance to regional cooperation. The Caucasus and Central Asian countries are part of the major environmental conventions and agreements and participate in international projects but there is no single regional joint project for the CCA. Better involvement of local population was identified as a challenge for the forest sector. The aims of the National Forest Programme (2013-2020) were listed:

- Creating environmentally friendly conditions;
- Forest restoration and biodiversity conservation;
- Sustainable forest management;
- Carrying out scientific research;
- Strengthening the legislative framework;
- International cooperation.

Some examples of activities under the NFP include:

- Creation of forest park areas;
- Creating protective forest belts;
- Landscape restoration in the national tourist area “Awaza”;
- Afforestation of the territory of the Aral Sea bed;
- Harvesting and growing seedlings;
- Inventory and forest monitoring.

Uzbekistan identified major challenges for the forest sector as follows:

- Development of forest stands to prevent erosion and establishment of forest plantations;
- Protection and conservation;
- Rational use of land by SFF;
- Promoting multifunctional use of forests;
- Development of international cooperation and investments;
- Introduction of innovative technologies.

The series of national presentations were followed by the Panel discussion on addressing challenges raised in the publication “State of the Forests of Caucasus and Central Asia”, which was moderated by Mr. Mati Valgepea.



Photo: During the panel discussion

Country representatives were invited to answer the following questions during the discussion:

- How to increase benefits provided by forests to society?
- How to improve monitoring of forests?
- How to strengthen forest sector institutions and improve funding?

Some highlights from the discussion:

For several years, remote sensing technologies have been applied for forest monitoring in **Armenia**. As a result, the information about forests has become more accessible, is regularly updated and allows drawing conclusions about the major parameters. The development of those practices as well as Information Technology (IT) and Artificial Intelligence (AI) tools can ensure the basic information for C&I and scenario building. The establishment of a monitoring and accountability system, which will ensure a stable flow of information, is urgently needed. It strives to transparently measure Armenia's progress in achieving national forestry targets under international obligations.

Azerbaijan has developed the new National Forestry Programme and its Action Plan for the period 2020 to 2030 in which strong emphasis is put on increasing forest cover while conserving and improving the country's forest resources. The sustainable development of forests is among the main priorities of the government of Azerbaijan. As to the reporting Azerbaijan thinks it is important to encourage stakeholders to be involved in forest monitoring. Thus, on the one hand, the stakeholders are better informed, and on the other hand, it is easier to ensure obtaining information from them.

In **Georgia** the main information will come from regular NFIs, and additional information is necessary for monitoring economic and social aspects. The Biodiversity and Forestry department will collect and analyze the available data (in future available in FIMS) to define gaps and find solutions for enhancement of forest policy. Annual reports will be elaborated



by the Biodiversity and Forestry department to exchange information on the development of the forestry sector as well as the implementation of commitments related to SFM.

In **Kazakhstan** despite the small area, the forests of the republic have important climate-water protection, field- and soil protection, sanitation, health and other useful functions and they play an important role in maintaining the ecological and socio-economic stability of the regions and individual groups of the population. Forest ecosystems conservation and effective management are identified as a challenge. The information on the achievement of indicators will be provided annually to the authorized body in the field of forestry, for their further analysis and development of recommendations and decision-making. In addition, according to the presented indicators, the activities of a government body in the field of forestry will be assessed.

In **Kyrgyzstan** forest monitoring is a priority, the country plans to use the national C&I set for annual data collection and reporting. The national C&I set should be used by the republican forestry management body for annual reporting, which will allow for a comparative analysis of data by year over a certain period and to draw conclusions on the future to achieve good results in managing the industry.

Tajikistan identified some of the key challenges for the forest sector in the country:

- Ensuring the survival of virgin forests;
- Enhancing the productivity of the soil and protecting it from erosion;
- Ensuring the sustainable use of natural resources;
- Identifying non-traditional energy sources to meet the needs of rural population.

In order to ensure the sustainable use of forest resources and their conservation and restoration, the following needs were identified:

- Creation of planted forests of quick-growing species, which can be used as fuel-wood and, in certain cases, as additional construction materials;
- Use of alternative energy sources;
- Raising environmental awareness among rural populations, regarding the sustainable use of forests.

Forests play a very significant role in economic development of **Turkmenistan**. They contribute to the sustainability of agricultural production, safeguarding and enriching biodiversity, preventing land desertification processes and mitigating climate change impacts. Additionally, forests can provide employment and income opportunities in rural areas. One of the challenges is to promote the sustainable use of NWFPs in order to improve livelihood in rural areas and conserve biodiversity. Training of specialists and their qualification improvement in the system of forestry management is set as a very important task.



Both **Tajikistan** and **Turkmenistan** consider the development of a C&I set a prerequisite for establishing better monitoring mechanisms.

Uzbekistan considers it imperative to ensure that the implementation mechanism works well as it will contribute in enhancing SFM.

5.2 Forest degradation – summary of the panel discussion

In her presentation, **Ms. Irina Vukolova, Vice-Rector, Russian Institute of Continuous Education in Forestry, the Federal Agency for Forestry (Rosleskhoz)** shared with the Congress participants the examples of forest regeneration monitoring and forest landscape restoration in Russia.

Ms. Yeva Danielyan, Leading Specialist, Forest Monitoring Center SNCO gave a presentation about the activities of the Forest Monitoring Center SNCO, Armenia. She explained how, by application of Geographic information Systems (GIS) and Remote Sensing (RS) in forest monitoring, the Forest Monitoring Centre is dealing with the main causes of forest degradation in Armenia - illegal loggings; mining; forest fires; forest pests and diseases; improper forest management / improper usage of allowable felling areas.

Panel 2 – Forest Degradation, moderated by Mr. Vardan Melikyan, UNDP in Armenia.

The country delegates were invited to answer the following questions:

- What are the key drivers and types of forest degradation?
- What are the major needs of countries in preventing degradation and promoting restoration of forest ecosystems?

Armenia identified some of the key drivers of deforestation in the country as follows:

- The best trees are cut illegally for commercial purposes, such as construction, furniture making and export;
- Grazing of livestock in forest areas prevents regeneration;
- Lack of education and awareness of the forest's value;
- Lack of community ownership and responsibility for forests;
- Lack of technical expertise;
- Lack of sustainable forest management practices.

Although the degradation is addressed at the local level on a small scale, there are no measures taken at the national level.

The dynamics of the illegal logging and reforestation were presented as shown figure 3, indicating that that since 2004 illegal logging was decreasing over time till 2017, when it increased drastically.



Figure 3: Dynamics of illegal logging in Armenia.

International cooperation of Hayantar with WWF, World Bank, FAO, IUCN, UNDP, CNF, GIZ and UNECE was noted.

Azerbaijan noted that overgrazing is a huge challenge for the country along with non-sustainable irrigation practices; the goal is to plant as much forest as possible

For **Kyrgyzstan**, the degradation in pastures and forest areas and over-aged forests is a challenge; and hence forest monitoring is a priority.

Kazakhstan identified the Aral Sea problem and forest fires as major reasons for forest degradation.

Uzbekistan noted that combatting desertification is a priority for the country and cooperation with Kazakhstan and Kyrgyzstan is ongoing.

Georgia identified the lack of forestry education as a problem.

In **Tajikistan** the main factors that cause forest degradation and destruction are illegal timber cutting and intensive grazing. Other factors are open access to forests, high fuelwood demand and lack of alternative fuels, exacerbated using inefficient stoves, an unclear legal framework regarding the responsibilities and jurisdiction, lack of data on which to base policy, weak law enforcement capacity. The main challenges for the forest sector in Tajikistan are identified as follows:

- Weak technical support;
- Weak campaigning among the population and joint forest management on village-council level;
- Inadequate financial support;
- Lack of highly qualified forestry workers;
- Insufficient knowledge of forest legislation;
- Weak forest control due to staff shortages;
- High cost of construction wood;

- Lack of information on the state of forests (inventory, taxation, etc.).

5.3 Reflection about past and future work in the forest sector and support needs in the region

The purpose of the reflection session about the projects and the way forward was to better understand the overall context and key challenges and strengths of C&I processes and results in the countries and their further support needs, specific recommendations for following up on the UNDA project and other areas for cooperation and upcoming projects were discussed.

The participants were asked to carry out a brief **SWOT ANALYSIS** in 6 groups (5 UNDA project countries and one group with non-project countries). Presentations followed when each group presented ‘*Strengths + Challenges*’ (*looking back*) and identified feasible recommendations for the future.



Photos: Presenting the group work.

Armenia sees the potential for developing ecotourism in the country. There is a need to improve technical and scientific capacity. One of the immediate needs is to carry out an NFI. Some other priorities are the completion of the institutional reform; and development of new energy forms to substitute the fuelwood.

Elaboration of factsheets (explanatory notes) for the agreed C&I is the first priority for **Georgia** for 2019. They also have a problem with socio-economic indicators, as the data is not available. Georgia would also like to test C&I on a local level.

Kazakhstan noted that political stability is a strength for the country, which is reflected in the forest sector as well. Kazakhstan is also interested in methodical assistance, especially in the field of strategic development of forestry (preparation of a draft medium-to-long-term program document).



Kyrgyzstan considers it important to systematize and align the national-level C&I set with indicators of the Sustainable Development Goals, as well as indicators of documents of national and sectoral significance aimed at sustainable development. It is important to have data sources and assess the feasibility of obtaining relevant data under existing conditions. International assistance may be required for methodological development of indicators and validation of data collection. Funding may also be required to issue a reporting informational compendium. Since the Kyrgyz Republic is a low-forest-cover country and existing forests play a mainly conservation role, the main activity of the forest sector is to increase the area covered by forests and to protect existing forests and preserve forest biodiversity. Considering the reform of the forest sector, a new legislative framework for sustainable forest management is to be developed.

Uzbekistan emphasized the need for the development of C&I implementation strategy or mechanisms.

All three non-project countries – Azerbaijan, Tajikistan and Turkmenistan consider the development of national-level C&I as a priority. As Azerbaijan has already developed a draft C&I set under a FAO project, they would welcome the support in testing and implementation. Tajikistan and Turkmenistan would welcome the support in developing C&I in the future.

Graphical presentations:

ARMENIA

Looking back		Looking forward
Strengths +	Challenges -	Recommendations +
<ul style="list-style-type: none"> - Rich biodiversity (flora, fauna) - Strong IT sector - A good legal framework for the development of alternative energy - Forest Code and other legal acts - Potential for the development of ecotourism and other ecosystem services 	<ul style="list-style-type: none"> - Incomplete institutional reforms of the forest sector - Lack of NFP - Socio-economic situation in rural areas - Insufficient technical, financial and professional resources - Lack of basic forest data - Climate change 	<ul style="list-style-type: none"> - Carrying out legal reforms - Development of a new NFP - Development of scientific, educational, training potential - Conducting a national forest inventory - Completion of institutional reforms, capacity development - Development of the production of alternative energy sources - Further development of the monitoring system



GEORGIA

Looking back		Looking forward
Strengths +	Challenges -	Recommendations +
<ul style="list-style-type: none"> - Increased knowledge and lessons learned - Existing capacity related to web & GIS portal/server 	<ul style="list-style-type: none"> - Communication - Social & economic data validation - Inter-sectoral approach 	<ul style="list-style-type: none"> - Elaboration of fact sheets - Possibility of testing national C&I for SFM

KAZAKHSTAN

Looking back		Looking forward
Strengths +	Challenges -	Recommendations +
<ul style="list-style-type: none"> - Political stability in the country - Existing forest legislation - Forestry structure built 	<ul style="list-style-type: none"> - Lack of a medium to long-term strategic document - Low attractiveness of the forest sector (young specialists do not go to work in the sector) - Fulfilment of country obligations under the Bonn Challenge 	<ul style="list-style-type: none"> - Develop and approve a strategic document - Increase the social security of agricultural specialists (housing, benefits, insurance) - Attracting investment in reforestation (technology transfer, nursery development)

KYRGYZSTAN

Looking back		Looking forward
Strengths +	Challenges -	Recommendations +
<ul style="list-style-type: none"> - Existing Legal Framework - Existing forest monitoring system 	<ul style="list-style-type: none"> - Institutional reform - Political context 	<ul style="list-style-type: none"> - Existing Legal Framework - Staff capacity building - Improving the state of forest



<ul style="list-style-type: none"> - Tourism attractiveness - "Patriotism" of staff - Civil Society Activism 	<ul style="list-style-type: none"> - Inadequate financing of the forest sector - Forest status - Anthropogenic load 	<ul style="list-style-type: none"> - Enhancing of fire safety standards - Improved forest monitoring (ERS) - Improving communications (strategy)
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UZBEKISTAN

Looking back		Looking forward
Strengths +	Challenges -	Recommendations +
<ul style="list-style-type: none"> - GosKomLes - a separate structural unit - Good staffing - Provision with regulatory legal acts - Availability of forest monitoring (forest management, forest fund accounting, design and survey) 	<ul style="list-style-type: none"> - Lack of forestry specialists - Lack of one-time forest inventory - Weak implementation of modern innovative technologies 	<ul style="list-style-type: none"> - To improve forestry planning, ensure a one-time inventory of forest land - Strengthen international cooperation to attract investment from international financial institutions and donors - Introduction of modern innovative technologies - capacity building of forest sector workers and sharing experiences - Involving the local population in the development of forest sector

Other (non-project) countries:

AZERBAIJAN, TAJIKISTAN, TURKMENISTAN

Looking back		Looking forward
Strengths +	Challenges -	Recommendations +
<ul style="list-style-type: none"> - Political will - The legislative framework - Availability of methodology and pilot work 	<ul style="list-style-type: none"> - Develop C&I and use in practice - Develop a monitoring system - Further development of forest inventory 	<ul style="list-style-type: none"> - Using C&I to apply in practice - Capacity building of the staff in the forest sector - Improving the legal framework



	<ul style="list-style-type: none">- Inadequate financial support- Weak cross-sectoral collaboration	
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Photo: Some results of the group work.



6 Forest Landscape Restoration

The Forest Landscape Restoration day was opened by **Mr. Sheripov, Deputy Director of the State Agency on Environment Protection and Forestry of Kyrgyzstan** from Kyrgyz side and opening remarks were made by **Mr. Michalak, UNECE/FAO** and **Mr. Volosyanchuk, IUCN**.

The following presentations were made:

Mr. Niels Thevs, ICRAF raised the question - What is degradation and how to address it? He gave the definition from the United Nations Convention to Combat Desertification (UNCCD)⁹ - "land degradation" means reduction or loss of the biologic or economic productivity and complexity of rain-fed cropland, irrigated cropland or range, pasture, forest, and woodlands - and concentrated on its reasons: uncontrolled fuel wood removal, uncontrolled timber harvest and over grazing. The countries across the region address forest and woodland degradation in their national strategies. Mr. Niels Thevs noted, and for FLR they need different approaches for different landscape types. Agroforestry, e.g. tree windbreaks and testing new sorts of fast-growing trees were given as examples of addressing degradation.

Mr. Roman Volosyanchuk, IUCN, presented FLR as a holistic approach to address development priorities and international commitments and Restoration Opportunities Assessment Methodology (ROAM) as a methodology to identify FLR benefits and opportunities that are socially, economically and ecologically appropriate. While forest loss, degradation of land and natural resources occur at growing rate in the Caucasus and Central Asia, the restoration of degraded and deforested landscapes using the forest landscape restoration (FLR) approach has gained recognition as a way for countries to achieve multiple national and international priorities on mitigating climate change, enhancing the resilience of vulnerable communities, improving livelihoods, reducing desertification and conserving biodiversity. **Mr. Volosyanchuk** noted that successful FLR is forward-looking and dynamic, focusing on strengthening the resilience of landscapes and is guided by a set of principles: focusing on landscapes; maintaining and enhancing natural ecosystems; engaging stakeholders and supporting participatory governance; tailoring to the local context; restoring multiple functions for multiple benefits; managing adaptively for long-term resilience.

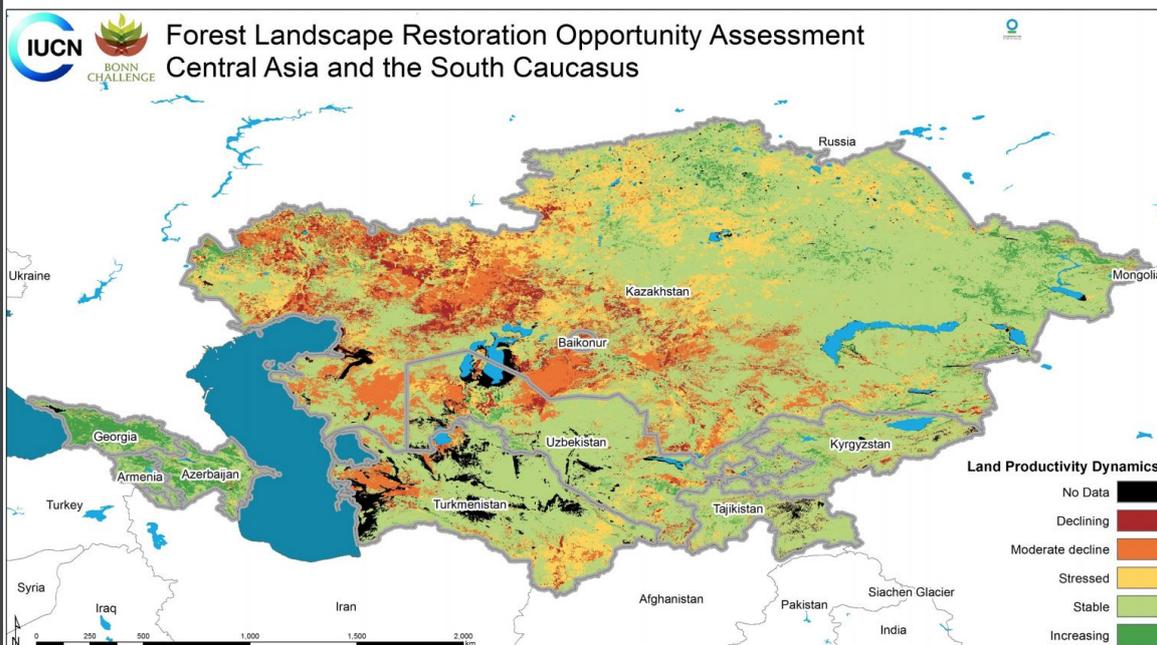
He emphasized that best practice guidance already exists for FLR implementation - ROAM is a methodology to identify and prioritize FLR opportunities at the national and subnational level. He also presented the preliminary stock-take of broad FLR options in each country of the CCA region.

⁹ <https://www.unccd.int>



PRELIMINARY ASSESSMENT OF DEGRADATION ПРЕДВАРИТЕЛЬНАЯ ОЦЕНКА ДЕГРАДАЦИИ

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Mr. Roman Michalak, UNECE/FAO gave a presentation about the international set of targets and indicators that are aligned with FLR. In the introduction, he reviewed the FAO definitions of forest degradation out of more than 50 formulated for different purposes. He briefly introduced the global agreements (SDGs, Paris Agreement, Land Degradation Neutrality, Aichi Biodiversity Targets, Global Forest Goals, Montreal Process, and Forest Europe) and focused on the regional C&I processes (soil condition, increment and fellings, forest fragmentation, damage assessment).

This was followed by a discussion and the participants were invited to address the following points:

- How is your country addressing the international-set of targets and indicators, including SDG 15, the UN Strategic Plan on Forests' targets (GFG 1, 3), their National Biodiversity Strategy and Action Plans (NBSAPs) indicators for Aichi Biodiversity Target 7 and 15?
- How is your country reporting on their Nationally Determined Contributions (NDCs) and possibly Land Degradation Neutrality LDN?
- How does your country define degradation?



6.1 “The road to implementation – national perspectives” - summary of the panel discussion

The panel “Road to implementation national perspectives” was moderated by **Mr. Maxat Yelemessov, Head of Forestry and Protected Areas Unit, Forestry and Wildlife Committee, Ministry of Agriculture, Kazakhstan.**

Mr. Yelemessov presented briefly information on the Ministerial Roundtable on FLR in the Caucasus and Central Asia, which was held on the 21 - 22 June 2018 in Astana, Kazakhstan.

The Ministerial Roundtable was organized jointly by the Ministry of Agriculture of the Republic of Kazakhstan, UNECE and FAO, in cooperation with IUCN and with the support of Germany. Participants included high-level representatives from Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan, as well as senior Bonn Challenge partners from the international and the donor community, leaders from international organizations and selected observers, among them representatives of UNECE/FAO, IUCN, Peoples Republic of China, Germany and the Russian Federation.

At the first Ministerial Roundtable on FLR six countries of the Caucasus and Central Asia pledged to restore a total of over 2.5 million ha of forest landscape under the Bonn Challenge by 2030¹⁰.

Caucasus and Central Asia pledges:

Armenia – 260,000 ha

Georgia – 9,000 ha

Kazakhstan – 1,500,000 ha

Kyrgyzstan – 323,200 ha

Tajikistan – 66,000 ha

Uzbekistan – 500,000 ha

The meeting also adopted the Astana Resolution¹¹, committing the Caucasus and Central Asia region to go beyond 2.5 million ha, and strengthen partnerships and regional cooperation to this end.

The country delegates were invited to answer the following topics during their interventions:

- Achievements since the Astana Ministerial Roundtable;
- Hurdles for implementation;
- Policies that can enable FLR;

¹⁰

http://www.unece.org/fileadmin/DAM/timber/meetings/2018/20180621/Astana_Roundtable_Summary_Report_ENG.pdf

¹¹ http://www.unece.org/fileadmin/DAM/timber/meetings/2018/20180621/Resolution_ENG.pdf



- National perspectives and strategies for implementation.

Some highlights from the discussion:

Armenia highlighted that they want to correct their pledge. To this IUCN stated this should be done in an official letter to their secretariat. The FLR objective is to reach a forest cover of 20.1% by 2050 this is restoration on 260,000 ha an action plan was prepared for that purpose and protective forest is created; through the Armenian Tree Project 200,000 trees are planted per year and good seed trees were identified to support the nurseries. The following problems were presented: challenge to establish nurseries; find suitable territory to be used for afforestation.

Mr. Alen Amirkhanyan, American University of Armenia, gave some information about the *Forest Summit: Global Action and Armenia* co-organized by the Armenia Tree Project (ATP) and the American University of Armenia (AUA) Acopian Center for the Environment. The goal of the Forest Summit is to facilitate open and rigorous discussion of policy decisions on Armenia's forests with the aim of catalyzing improvements in forest conservation and restoration in Armenia and internationally.

After joining the Paris Agreement **Azerbaijan** takes restoration seriously, but a conceptual approach is missing; the Bonn Challenge is of great interest to Azerbaijan and they took the decision to make a pledge towards the Bonn Challenge.

Georgia took the obligation to restore the forest on 1,500 ha and support natural regeneration on 7,000 ha; in 2018, 163 ha were restored; after the restoration of forest, maintenance is required for a minimum of 5 years that is one of the main challenges for the country. According to conditional commitments under forest annex of NDCs of Georgia, SFM should be implemented at least on 250,000 ha. Nevertheless, elaboration of a forest management plan does not automatically guarantee the establishment of the sustainable forest management system. To fulfil obligations, Georgia has developed a proposal for the Green Climate Fund (GCF) according to which, the National Forestry Agency should implement SFM in 8 districts, covering 270,807 ha of state-managed forests with SFM (over-achieving the NDC target of 250,000 ha) resulting in reduced forest degradation, and enhanced timber/carbon stocks. Besides, Georgia attaches big importance to quality restoration. Rather than having, a large quantity of restored landscape without proper maintenance. The identification of seedlings, funding, and human resources are among the challenging problems.

Kazakhstan thinks it important to consider native species and the soil condition of the country for restoration to avoid the loss of local species. The restoration is a topic under the prime minister's office; a step-by-step action plan in the framework of the Bonn Challenge was established for all areas; there were major forest losses after fires, planting after fires and storms is important; a World Bank (WB) project supports the planting of 56,000 ha of saxaul.



In **Kyrgyzstan**, the restoration on 22,000 ha was funded from the state budget. This should be increased to 100,000 ha; through a FAO GEF project 100,000 ha of saxaul plantation is planned; agroforestry will cover 200,000 ha within 3 years; six CBD reports were already prepared to assess the activities on biodiversity; Aichi Goals and SDGs are being reported. The following challenges were identified: the low survival rate of trees, livelihoods depending on livestock as overgrazing is a big problem.

Uzbekistan stated that 500,000 ha are already planted, and their BC commitment fulfilled. They are considering increasing their pledge to 1 million ha or even more and will announce it at the next high-level event. Uzbekistan thinks that investments in agroforestry are necessary; fencing is a big problem. Uzbekistan identifies the following challenges: how to involve local population; monitoring of results; involvement and support of other ministries.

Turkmenistan has a national forest program and plants 3 million trees per year; 900 million trees were planted since 1990. The problem was that until 1998, mainly coniferous trees were planted, but then pests appeared, and biological pesticides were needed. Now they try to plant more mixed species composition.

6.2 Azerbaijan pledges towards the Bonn Challenge

At the Congress **Azerbaijan** announced its pledge to restore 170,000 ha of degraded lands by 2030 - and an additional 100,000 ha conditional upon receiving funding - under the Bonn Challenge. With this commitment, Azerbaijan joined the six countries in the Caucasus and Central Asia (Armenia, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan), bringing the region's collective commitments under the Bonn Challenge to about 3 million ha.

For Azerbaijan, joining the Bonn Challenge is a great opportunity to not only to increase benefits from forest ecosystems but also to gain international visibility for its efforts. "Azerbaijan is a low-forest-cover country that prioritises the increase of forest cover and the restoration of degraded lands," said **Mr. Sadig Salmanov, Ministry of Ecology and Natural Resources of Azerbaijan**. "On behalf of the government of Azerbaijan, I would like reiterate our support for the Bonn Challenge and add our contribution of 270,000 ha of the restored area by 2030." To achieve this goal, Azerbaijan has already started to identify the potential areas for restoration, focusing particularly on riparian Tugai forests¹².

¹² <http://www.unece.org/info/media/presscurrent-press-h/forestry-and-timber/2019/azerbaijan-brings-degraded-land-restoration-commitments-in-caucasus-and-central-asia-to-3-million-ha/doc.html>



6.3 “The road to implementation – international perspectives” - summary of the panel discussion

The panel “the road to implementation-international perspectives” was moderated by **Mr. Eldiar Sheripov**, Deputy Director of the State Agency on Environment Protection and Forestry of Kyrgyzstan. The panelists: IUCN, World Bank, FAO, GIZ.

Mr. Ekrem Yazici, Deputy Chief of FAO/UNECE Joint Forestry and Timber Section reviewed FAO funding opportunities for FLR. He focused on FAO’s strategic objectives, among others those focusing on agriculture, forestry and fisheries and reviewed the regional priorities of the FAO Regional Office for Europe, which among others focuses on promoting sustainable natural resource management and combating land degradation and desertification. FAO forestry works in the region include:

- Strengthening forest governance (including policy, legal and institutional structures);
- Establishing forest/tree resources assessment and monitoring system;
- Fostering land-tenure security and forest ownership;
- Combatting deforestation and degradation of forests caused by fuelwood gathering and livestock grazing;
- Restoring and sustainably managing mountain watersheds and conserve riparian (tugai) forests; and
- Adapting to climate change and mitigating its impacts on forests and land resources.

Mr. Yazici noted that the new approach to country programming requires that the Country Programming Framework (CPF) and Country Work Plan (CWP) be adopted for all countries receiving FAO support, regardless of whether there is an FAO country representation.

FAO project support can be through the regular programme like the technical cooperation programme (TCP), including TCP facility or extra-budgetary programmes like the Government Cooperative Programme (GCP), Unilateral Trust Fund (UTF) or Special Fund for Emergency and Rehabilitation (SFERA).

FAO supports national projects - implemented in a single country; sub-regional projects implemented in a single sub-region (in two or more countries); regional projects implemented in a single region; inter-regional projects and global programmes or projects.

Mr. Yazici emphasized that there is a need both for collaborative efforts to develop regional financial supports to the countries to support their FLR efforts and Bonn Challenge pledges and strong high/political level support from national partners.

Ms. Drita Dade, the World Bank Office Albania, focused on the idea of an initiative 30X30 for Europe, Caucasus and Central Asia. A new World Bank (WB) program, the Resilient Landscape Program (RESILAND) aims at making regional landscapes more resilient to climate change at large, promoting sustainable and integrated landscape practices at all levels, from farmers and families to big business and governments. Ms. Dade explained that the WB is going to



have a new programmatic approach, bringing together different funding, different donors, and different sources of financing to make investments in:

1. Sustainable Land and Water Management (from terracing to water harvesting to soil fertility management);
2. Landscape Restoration (forest plantations, agroforestry and protected areas);
3. Livelihood alternatives, jobs and ecotourism;
4. Nature-based infrastructure and bioresource engineering solutions to manage disaster and climate risks;
5. Design of a Resilience Bond Program and other private sector financial solutions.

The World Bank supports:

- Identification of knowledge gaps, improvement of data collection and analyses;
- Collaboration with partner organizations in the countries that are contributing to the agenda.

Ms. Drita Dade, the World Bank Office Albania also presented the WB Forest and Landscape Restoration projects in Kyrgyzstan, Tajikistan and Uzbekistan

In Kyrgyzstan the World Bank works on the Integrated Forest Ecosystems Management Project. The main objective of this five-year project is to strengthen the capacity of government and communities to improve sustainable forest ecosystem management in the country through investments in management planning, ecosystem restoration, and infrastructure. Natural Capital Accounting and Valuation of Ecosystems (WAVES+) envisages the development of national forest sector accounts to inform development planning and policy analysis

In Tajikistan among the ongoing projects, she mentioned CAMP4ASB - regional access to improved climate change knowledge services and climate investments in Tajikistan and Uzbekistan and the PROFOR Study - Cost-benefit analysis of climate adaptation and assessment of landscape degradation costs.

In Central Asia, the World Bank supports building new Technical Assistance (TA) programs – data, analyses – focusing on economics. Among the projects, she identified RESILAND – Resilient Landscapes and CLIENT - Climate and Environment Landscape for sustainable energy.

Mr. Marat Asanaliev, GIZ Kyrgyzstan, described a FLR project in cooperation with the SAEPF of Kyrgyzstan. He noted that there is an agreement between SAEPF and GIZ to consider the possibility of supporting a ‘green belt’ to enable the Republic of Kyrgyzstan to meet its international obligations of FLR (23,200 ha) under the Bonn Challenge and, at the same time, aiming at developing the most effective restoration methods of degraded forests lands on the territories of the state forest fund and possibly on the municipal lands of the Kyrgyz Republic adjacent to Kazakhstan.



Mr. Roman Volosyanchuk, IUCN, gave an updated overview of the Bonn Challenge and the UN Decade on Ecosystem Restoration¹³.

The Bonn Challenge is a global effort to bring 150 million hectares of degraded & deforested land into restoration by 2020 & 350 million hectares by 2030. It is a vehicle for domestic priorities such as improving food, water & energy security, & promoting rural development. By April 2019, the commitments had been made to restore 170.43 million hectares. With Azerbaijan joining the six countries in the Caucasus and Central Asia (Armenia, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan) with its pledge to restore 270,000 ha by 2030 the region's collective commitments under the Bonn Challenge comes to about 3 million ha.

Mr. Volosyanchuk focused on how the regions are building support. Many high-level processes are emerging in support of the Bonn Challenge, driven by the political will of the countries and regional institutions and FLR supportive platforms. Multi-country programs are catalysing implementation & providing models for collaboration. Regional Ministerial Meetings are important milestones in the process.

The UN Decade on Ecosystem Restoration (2021 to 2030) aims to accelerate existing global restoration goals among them the Bonn Challenge. Mr. Volosyanchuk presented the IUCN work to provide knowledge and tools to guide policy design and landscape-scale decision-making. The UN Environment Programme and FAO would build on existing formal and informal partnerships, and close collaboration with IUCN and its network of over 1000 member organizations building on the experience of IUCN in supporting the Bonn Challenge. IUCN manages the Bonn Challenge website, which tracks all the Bonn Challenge commitments and related details.

Ms. Iskakova Nargiza, German Embassy in Bishkek, stated the support of Germany for the project and countries and welcomed the efforts and commitments of the CCA region towards the Bonn Challenge. Forest landscape restoration is one of the priority areas for technical support for Germany and further engagement on the topic in the region is foreseen.

6.4 Outcomes of the peer-to-peer exercise on monitoring FLR

Peer-to-peer session: Bonn Challenge Barometer Application in the Caucasus and Central Asia

The session started with a presentation from **Mr. Roman Volosyanchuk, IUCN**, on the Bonn Challenge Barometer¹⁴, focusing on the Barometer application for identifying, assessing and tracking progress on Bonn Challenge commitments. He explained the process and timeline, the core principles, date tiers and dimensions.

¹³ <https://www.decadeonrestoration.org/>

¹⁴ <https://infoflr.org/bonn-challenge-barometer>

An interactive exercise followed focusing on the Barometer application in the Caucasus and Central Asia. Eight working groups, divided by countries, took part in the exercise. the purpose of this exercise was to better understand and address the following points:

- How are the countries tracking progress?
- Which information needs to be gathered for progress tracking?
- How to use the C&I for SFM to measure progress on FLR implementation?
- What are the expectations, feedback, and strategies in the countries?
- How the countries see the future work on FLR, what are the support needs?



Photo: Presentation of the Bonn Challenge Barometer.



Photo: Presenting the results of the group work.



Photo: Results from the group work.

Presentations by countries:

Armenia

<i>How are your countries tracking progress?</i>	Forest Monitoring Centre, Hayantar, Geographic Information System (GIS), Remote Sensing (RS), web-based technologies; for the future it is planned to use the Restoration Opportunities Assessment Methodology (ROAM)
<i>Which information needs to be gathered for progress tracking?</i>	Establishment of data basis. Main factors (indicators): - Natural – climatic; - Land use type / social-economic; Local capacities.
<i>How to use the C&I for SFM to measure progress on FLR implementation?</i>	Develop specific indicators Filters
<i>What are your expectations, feedback, strategies?</i>	Mapping/zoning Developing appropriate technologies
<i>How do you see the future work on FLR in your country, what are the support needs?</i>	Technical capacities development (considering also additional prof resources)

Azerbaijan

<i>How are your countries tracking progress? Which information needs to be gathered for progress tracking?</i>	<ul style="list-style-type: none"> - Long term conceptual approach (NFP 2030) - Monitoring of the FLR activities implementation using GIS - Inventory and assessment of the new stands established - Baseline data are important
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<i>How to use the C&I for SFM to measure progress on FLR implementation?</i>	C&I are the basis for SFM
<i>What are your expectations, feedback, strategies?</i>	<ul style="list-style-type: none"> - 270,000 ha (170,000 +100,000) contribution to the Bonn Challenge - Will contribute to the NDC and SDG implementation
<i>How do you see the future work on FLR in your country, what are the support needs?</i>	<ul style="list-style-type: none"> - Setting up NFI - Data management - Adequate legislation framework - Close involvement of the private sector and communities - Capacity development - Enhance the educational system

Georgia

<i>How are your countries tracking progress? Which information needs to be gathered for progress tracking?</i>	<ul style="list-style-type: none"> - Area in ha - Tree species (number, stock) - Regeneration class - GIS data - Implementation status
<i>How to use the C&I for SFM to measure progress on FLR implementation?</i>	Report at the national level according to the relevant indicators for FLR every 5 years and develop evidence-based recommendations
<i>What are your expectations, feedback, strategies?</i>	<ul style="list-style-type: none"> - FLR opportunity mapping - Operational plan
<i>How do you see the future work on FLR in your country, what are the support needs?</i>	<ul style="list-style-type: none"> - Mobilize resources - Capacity building - Awareness raising - Strengthen communication

Kazakhstan

<i>How are your countries tracking progress? Which information needs to be gathered for progress tracking?</i>	There is annual statistical reporting by agencies (the form 8-Lkh). The form is filled in by every forest owner, the Oblast (regional) forest administrations consolidate them and forward to the KazLesProject (the state forest inventory and planning institution), which generalizes it at the national level and provides the info to the Committee.
<i>How to use the C&I for SFM to measure progress on FLR implementation?</i>	C&I will be used for evaluation of the work of forest owners on implementing FLR. Additionally, the data gathered will be used in the process of forming the relevant annual budgets.
<i>What are your expectations, feedback, strategies?</i>	By 2030, the total forest coverage has to reach 5% of the country territory.
<i>How do you see the future work on FLR in your country, what are the support needs?</i>	To increase the FLR area, international support is needed for the following: <ul style="list-style-type: none"> - Forest area monitoring;



	<ul style="list-style-type: none"> - Improving machinery and equipment; - Technology transfer; - Capacity building for the forest staff.
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Kyrgyzstan

<i>How are your countries tracking progress? Which information needs to be gathered for progress tracking?</i>	<ul style="list-style-type: none"> - Annual inventory of planted areas - National summary of the forest land inventories every 5 years (Forest Resources Assessment) - Forest management plans for every 10 years - Amount of carbon sequestered in forest stands - Updated database - Updated forest maps - Implementation of SDG, Aichi targets / commitments - Area of planted stands - Survival ratio on planted areas - Area of land with canopy establishment after planting (conversion to forest covered land)
<i>How to use the C&I for SFM to measure progress on FLR implementation?</i>	Indicators related to FLR, the Bonn Challenge, the Paris Agreement, NDCs, sustainability identification, Forest Management Plans
<i>What are your expectations, feedback, strategies?</i>	<ul style="list-style-type: none"> - Increased share of the forest sector in the country's GDP - Increased forest cover to 6% of the total country territory - Increased welfare of the population - Decreased degradation processes - Increased involvement of all stakeholders
<i>How do you see the future work on FLR in your country, what are the support needs?</i>	<ul style="list-style-type: none"> - Capacity building - Better cross-sectoral understanding.

Tajikistan

<i>How are your countries tracking progress? Which information needs to be gathered for progress tracking?</i>	Inter-sectoral Working Group. National Commission.
<i>How to use the C&I for SFM to measure progress on FLR implementation?</i>	We have not been involved into the process yet, but we hope for the support to get involved into it.
<i>What are your expectations, feedback, strategies?</i>	<p>Development of a program (concept) and an Action Plan for it.</p> <p>We hope for support from partners, donors and International Organizations.</p>
<i>How do you see the future work on FLR in your country, what are the support needs?</i>	Capacity building



Turkmenistan

<i>How are your countries tracking progress? Which information needs to be gathered for progress tracking?</i>	Ministries and Agencies -> Forest Seed Breeding and National Park Protection Service -> Environment Protection Service -> Ministry of Agriculture and Nature Protection -> the Cabinet of Ministers
<i>How to use the C&I for SFM to measure progress on FLR implementation?</i>	Indicators help to evaluate the work of Ministries and Agencies on implementing tasks of the National Forest Program.
<i>What are your expectations, feedback, strategies?</i>	<ul style="list-style-type: none"> - Implementation of the National Forest Program (2013 – 2020) - Mitigation of results of the climate change - Combatting desertification - Biodiversity conservation
<i>How do you see the future work on FLR in your country, what are the support needs?</i>	A new National Forest Program will be developed for the period 2020 – 2030.

Uzbekistan

<i>How are your countries tracking progress? Which information needs to be gathered for progress tracking?</i>	<ul style="list-style-type: none"> - Identification of areas requiring FLR - Monitoring of the FLR activities implementation using GIS - Inventory and assessment of the new stands established
<i>How to use the C&I for SFM to measure progress on FLR implementation?</i>	For the development of a methodology on assessing the progress of the FLR implementation
<i>What are your expectations, feedback, strategies?</i>	Strategy development
<i>How do you see the future work on FLR in your country, what are the support needs?</i>	<ul style="list-style-type: none"> - Stakeholder involvement including the local population; - Establishment of nurseries; - Inventory and monitoring of the new stands established, relevant methodology development; - Capacity building.



7 Next steps and identification of further support needs

Session 4: Bonn Challenge Barometer Application in the Caucasus and Central Asia – Continuation

As part of the interactive exercise described above, the country groups presented how they see the future work on FLR and the support needs.



Photo: Discussing the challenges and the future support needs.

Better stakeholder involvement was identified by all the countries as an immediate challenge requiring the following actions:

- contribute to building the culture of SFM by involving all stakeholders, including local population;
- increase public participation in decision-making processes and sustainable use of forest resources;
- awareness-raising activities;
- improve communication and exchange of information among different stakeholders;
- improve the cross-sectoral understanding;
- contribute in building international cooperation.

The Country working groups also identified and presented the following next steps:

- setting up NFI;
- providing adequate legislation framework;
- mobilizing resources.

While discussing the further support needs, the needs for methodological support, as well as support for data management and capacity building were shared by almost all the countries. Some other support needs identified were:



Azerbaijan considered it important to improve the educational system;

Kazakhstan considers that in order to increase the FLR area, international support is needed for the following:

- Forest area monitoring;
- Improving machinery and equipment;
- Technology transfer.

A new National Forest Program will be developed in **Turkmenistan** for the period 2020 – 2030.

Uzbekistan listed the establishment of nurseries; and development of inventory and monitoring of the new stands as a priority.

Three countries (**Armenia, Georgia, and Uzbekistan**) expressed their interest in pilot testing of the Bonn Challenge Barometer for reporting progress in their pledge implementation and started relevant consultations with the IUCN Global Forest Team.



Photo: On the fourth day of the Congress, during the fieldtrip.

Annexes

Annex 1. Agenda of the Forest Congress for the Caucasus and Central Asia

	Tuesday 28 May Monitoring Systems	Wednesday 29 May Monitoring and State of Forests	Thursday 30 May Forest Landscape Restoration	Friday 31 May
M O R N I N G	Registration at 9.15 Start sharp at 9.30 I. Preliminaries Welcome and opening remarks Mr. Eldiar Sheripov, <i>State Agency on Environment Protection Kyrgyzstan</i> Mr. Ekrem Yazici, <i>Deputy Head UNECE/FAO FTS</i> Key note speech on linking C&I to the national forest strategy, Mr. Tamer Otralcier	Registration at 9.15 Start sharp at 9.30 III. Interactive launch of the SoCCAF study Kick-off presentation by Mr. Roman Michalak, <i>UNECE/FAO</i> National Perspectives, national experts from all CCA countries	Registration at 9.15 Start sharp at 9.30 Opening of the Forest Landscape Restoration day Welcome by the host country, UNECE/FAO, IUCN FLR – a holistic approach What is degradation and how to address it? Mr. Niels Thevs, <i>ICRAF</i> The many faces of FLR and ROAM, Mr. Roman Volosyanchuk, <i>IUCN</i> International targets and indicators aligned with FLR, Mr. Roman Michalak, <i>UNECE/FAO</i>	Field trip day (Visit to the Grigoriev Gorge and the local forestry department)
	Break 11.00 - 11.30 II. Sharing – country presentations of C&I sets Armenia – Mr. Areg Karapetyan, <i>National Focal Point to UNDA project, Director of “Hyantar” SNCO</i> Georgia – Mr. Carl Amirgulashvili, <i>Head of Forest Policy Service</i> Kazakhstan – Mr. Maxat Yelemessov, <i>Head of Forestry and Protected Areas</i> Kyrgyzstan – Ms. Suizanna Seideeva, <i>project coordinator</i> Uzbekistan – Mr. Abduvokhid Zakhadullaev, <i>State Committee on Forestry</i>	Break 11.00 - 11.30 III. Interactive launch of the SoCCAF study To be continued Panel 1 – Addressing challenges, moderated by Mr. Mati Valgepea – How to increase benefits provided by forests to society? – How to improve monitoring of forests? – How to strengthen forest sector institutions and improve funding?	Break 11.00 - 11.30 Panel: Road to implementation national perspectives Moderated by Mr. Maxat Yelemessov Topics: – Achievements since the Astana Ministerial Roundtable – Hurdles for implementation. – Which policies can enable FLR? – National perspectives and strategies for implementation.	
	Lunch 13.00 - 14.00 II. Sharing – country presentations of C&I sets To be continued Peer-review of the sets and discussion	Lunch 13.00 - 14.00 IV. Forest degradation and restoration Degradation and restoration indicators, presentation, Mr. Michael Köhl, <i>University of Hamburg</i> Examples of forest regeneration monitoring and forest landscape restoration in Russia, Ms. Irina Vukolova Panel 2 – Forest Degradation, moderated by Mr. Vardan Melikyan – What are key drivers and types of forest degradation? – What are the major needs of countries in preventing degradation and promoting restoration of forest ecosystems?	Lunch 13.00 - 14.00 Panel: Road to implementation international perspectives Moderated by Mr. Eldiar Sheripov Panellists: IUCN, World Bank, FAO, GIZ	
A F T E R N O O N	Break 15.30 - 16.00 Impacts of C&I processes, presentation, Ms. Stefanie Linser, <i>BOKU</i> Comparison of the SFM vision at the beginning and end of the project – poster exhibition.	Break 15.30 - 16.00 V. Reflection session about the projects and the way forward UNDA follow up, feedback, evaluation and reflection; other areas for cooperation and upcoming projects.	Break 15.30 - 16.00 The way forward Presentation of the Bonn Challenge Barometer, Mr. Roman Volosyanchuk, <i>IUCN</i> Peer-to-peer exercise: – How are other countries tracking progress? – What are further support needs? Wrap up and conclusions Needs assessment and way forward	
	Close 17.30	Close 17.30	Close 17.30	

**UNECE****Food and Agriculture
Organization of the
United Nations**

Annex 2. List of participants



Forest Congress for the Caucasus and Central Asia

Start Date: Tuesday, May 28, 2019 **End Date:** Friday, May 31, 2019
Participants: 51

Last Name	First Name	Title	Organization	Countries Represented
Aleksidze	Gigia	Mr.	Ministry of Environmental Protection and Agriculture of Georgia	Georgia
Alibakieva	Cholpon	Ms.	Representation of Food and Agriculture Organization in the Kyrgyz Republic	Kyrgyzstan
Amirgulashvili	Carl	Mr.	Ministry of Environmental Protection and Agriculture of Georgia	Georgia
Amirkhanian	Alen	Mr.	AUA Acopian Center for the Environment, American University of Armenia	
Asanaliev	Marat	Mr.	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)	
Baidaliev	Aibek	Mr.	State Agency on Environment Protection and Forestry	Kyrgyzstan
Bitayeva	Madina	Mrs.	Association of legal entities "Association of Forestry and Timber Processing Organizations"	
Chyngojoev	Abdymital	Mr.	Representation of Food and Agriculture Organization in the Kyrgyz Republic	Kyrgyzstan
Dade	Drita	Ms.	The World Bank Office Albania	
Danielyan	Yeva	Mrs.	Forest Monitoring Center SNCO	Armenia
Durikov	Muhammet	Dr.	State Committee for Environmental Protection and Land Resources of Turkmenistan	Turkmenistan
Iskakova	Nargiza	Ms.	German Embassy in Bishkek	Germany
Ivanov	Alexandr	Mr.		
Jain	Nandita	Ms.	The World Bank	
Karapetyan	Areg	Mr.	Committee of Forest of the Ministry of Nature Protection of the Republic of Armenia	Armenia
Kirvalidze	Nato	Ms.	Regional Coordinator under the UNDA, UNECE/FAO project	
Koshkin	Edith	Ms.	GIZ	
Linser	Stefanie	Dr.	European Forest Institute, Forest Policy Research Network, c/o University of Natural Resources and Life Sciences, Vienna (BOKU)	
Loeffler	Theresa	Ms.	United Nations Economic Commission for Europe (UNECE)	
Martirosyan	Vahe	Dr.	Armenia Tree Project	Armenia
Matchavariani	Merab	Mr.	National Forest Agency	Georgia
Mehdiyev	Bariz	Mr.	Regional Environmental Center for the Caucasus	
Melikyan	Vardan	Mr.	UNDP in Armenia	
Michalak	Roman	Mr.	UNECE/FAO Forestry and Timber Section	
Nazarov	Azizbek	Mr.	Forestry Agency under the Government of the Republic of Tajikistan	Tajikistan
Nazarova	Odina	Ms.	Forestry research institute	



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Odilov	Allamurod	Mr.	Uzon Forestry	Uzbekistan
Otrakcier	Tamer	Mr.		
Petrosyan	Artur	Mr.	Ministry of Nature Protection of the Republic of Armenia	Armenia
Raimkulov	Nurlan	Mr.	Biodiversity Conservation Fund of Kazakhstan	
Salmanov	Sadig	Mr.	Ministry of Ecology and Natural Resources	Azerbaijan
Sarsenbayev	Yergeldy	Mr.	The Office of the Prime Minister of the Republic of Kazakhstan	Kazakhstan
Seideeva	Siuzanna	Mrs.	Department of Sustainable Forest Management Department of Forest Ecosystems Development	Kyrgyzstan
Shammed	Saryhanov	Mr.	Ministry of Nature Protection of Turkmenistan	Turkmenistan
Sharipov	Davlatali	Mr.	Forestry Agency under the Government of the Republic of Tajikistan	Tajikistan
Shelest	Roksolana	Ms.	UNECE/FAO Forestry and Timber Section	
Sheripov	Eldiar	Mr.	State Agency on Environment Protection	Kyrgyzstan
Suiundukov	Kanatbek	Mr.	FAO country office Kyrgyzstan	
Talipov	Khodjimurat	Mr.	Ministry of Agriculture and Water Resources of the Republic of Uzbekistan	Uzbekistan
Thevs	Niels	Dr.	CIGAR/ICRAF, University of Central Asia	
Tskhovrebadze	Natia	Ms.	Ministry of Environmental Protection and Agriculture of Georgia	Georgia
Valgepea	Mati	Mr.	Estonian Environment Agency	Estonia
Volosyanchuk	Roman	Dr.	Regional Office for Eastern Europe and Central Asia IUCN (International Union for Conservation of Nature)	
Vukolova	Irina	Ms.	Russian Institute of Continuous Education in Forestry	Russian Federation
Yazici	Ekrem	Mr.	UNECE/FAO Forestry and Timber Section	
Yelemessov	Maxat	Mr.	Forestry and Wildlife Committee of the Ministry of Agriculture of the Republic of Kazakhstan	Kazakhstan
Yrsaliev	Bakyt	Mr.	Forest Ecosystem Development and PAs Department State Agency on Environment Protection	Kyrgyzstan
Zakhadullaev	Abduvokhid	Mr.	State Committee on Forestry of the Republic of Uzbekistan	Uzbekistan
Zhumaliev	Aisuluu	Ms.	State Agency on Environment Protection and Forestry	Kyrgyzstan
Zhusupova	Nargiza	Mrs.	Kyrgyz Association of Forest and Land Users	
Šmída	Zbyněk	Mr.	Forest management institute in Czech Republic	Czech Republic



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Annex 3. Pre-Congress Assignments

ARMENIA

National-level forest monitoring systems

UNECE/FAO, UNDA project

«Accountability Systems for Sustainable Forest Management in the Caucasus and Central Asia»

Forest Congress for the Caucasus and Central Asia

28 - 31 May 2019, Issyk Kul, Kyrgyzstan

1. BACKGROUND

- **FOREST DATA**

Forest ecosystems in Armenia has high significance from the environmental also social and economic points of view. Forest lands in Armenia are under exclusive state ownership.

According to the forest inventory results from 1993, the forest cover of a country is about 334,100 hectares or approximately 11% of the country's total area, which is mostly located at south and north-eastern parts of the country. Besides this according to another source (data received in 2011 by using remote sensing methods) the forest cover of Armenia is 332,333 hectares.

75% of forests is under management of “Hayantar” SNCO (Armforest) and other 25% are managed by specially protected nature areas. The major forest protected areas are “Khosrov forest” state reserve, “Shikahogh” state reserve, and “Dilijan”, “Sevan”, “Arevik” national parks. All of them in addition to “Hayantar” forest enterprises are in a system of Ministry of Nature Protection.

Broadleaf, coniferous and arid open wood forests are the main types of forests in Armenia, dispersed according to elevation, soil conditions and other nature climatic conditions. Broadleaf forests account more than 2/3 of the whole forests in the country. Broadleaf forests consist primarily of beech, oak, hornbeam and coniferous forests consists of pine, besides open wood forests, where the dominant species is juniper. Forests in Armenia are valuable not only by their biodiversity, but also by ecosystem services provided. It is an asset the number of edible, medicinal plants.

- **RATIONALE** *(Please provide information about your country's context and purpose for the development and application of criteria and indicators (C&I) for sustainable forest management (SFM).)*

Considering current state of forests, it is an urgent measure of early identification of the threats and prediction of further negative impacts. Scenario building and monitoring tools are required for data gathering and processing. Such monitoring systems are mostly



work on some targeted indicators. It is the first and most important step towards right decision making and management. In our case there is no officially adopted monitoring system applicable for forests and forest ecosystems. Currently working on creation of forest inventory and database systems we have serious issue with identifying right indicators to cover the whole aspect of contributing factors. Towards application of sustainable forest management in Armenia, the specific set of indicators and criteria only can provide baseline data.

2. DEVELOPMENT OF NATIONAL C&I SET

• **Overview of activities** *(Please provide an updated overview of activities conducted in your country to develop a national C&I set. Please also describe methods used, the time frame and who was engaged in these activities. Concentrate especially on activities which were organized besides the UNECE/FAO workshops.)*

Overview of activities conducted in Armenia to develop national C&I (started from 2016) are mostly include UNECE/FAO workshops.

1. Regional Inception Workshop (UNECE/FAO, UNDA / 15 - 18 November 2016/ Yerevan, Armenia)
2. National Coaching Workshop (UNECE/FAO, UNDA / 13 - 15 September 2017 / Yerevan, Armenia)
3. Regional Interim Workshop (UNECE/FAO, UNDA / 20 - 23 February 2018 / Tbilisi, Georgia)
4. 2nd National Workshop (UNECE/FAO, UNDA / 20 - 22 February 2019 / Yerevan, Armenia)

Besides these formal events, periodic meetings of local working group took place for several times. Establishment of non-formal technical working group was initiated by the Ministry of Nature Protection and project focal point. The group consist of Project focal point, project consultant, specialists from Ministry of Nature Protection, Hayantar as well as other stakeholders (specialists from Forest monitoring center, individual experts also representatives of academia) had an aim to keep control on a process mostly after workshops as well as to develop work plans. The last meeting of the working group took place on May 14 to discuss further steps regarding to C&I set.

• **Challenges of developing C&I** *(What were the key challenges, lessons and recommendations from the process?)*

The development of the C&I for SFM by itself we consider as a continuous process and is not limited by this project. So, the main challenge is to have SMART indicators applicable at different levels of monitoring. We should not forget that the outcome of this process is a kind of toolbox which should be used by decision makers, who are interested mostly to have broader frames, but at a lower level of field workers (participating in data gathering) this can make some troubles because of low level of capacities. The main recommendation



we have received during this process is to have optimal number of indicators- feasible to achieve.

• **Your country’s experiences in selecting C&I**

<ul style="list-style-type: none"> • <i>Was the selection of indicators for each criterion a simple or complex process? Please explain the reasons behind.</i> 	That was hard because of the presence of different opinions
<ul style="list-style-type: none"> • <i>Which stakeholders were involved?</i> 	About 30 national experts on forests and related spheres (from government, academia and NGOs) were involved
<ul style="list-style-type: none"> • <i>Did the stakeholder have enough experience to propose clear indicators?</i> 	There were lack of specific knowledge in developing indicators and their further implementation
<ul style="list-style-type: none"> • <i>Was an excessive number of indicators proposed in the early stages of the process?</i> 	Yes
<ul style="list-style-type: none"> • <i>How many indicators were chosen initially?</i> 	74 indicators (after first national workshop)
<ul style="list-style-type: none"> • <i>How did the number change at later stages and why?</i> 	27 indicators were removed, and after 2nd national workshop 47 indicators left
<ul style="list-style-type: none"> • <i>Were they prioritised adequately?</i> 	From the point of view of prioritization, there is still a need to revision
<ul style="list-style-type: none"> • <i>Were new indicators selected and some old ones abandoned after the 2nd regional workshop and the peer reviews of national C&I set?</i> 	No
<ul style="list-style-type: none"> • <i>What were the determining factors for screening the indicators? (e.i. taking into account their relevance, data availability and cost efficiency). Please add anything relevant to your country.)</i> 	Achievable Easy to control Progressive Harmonization with national strategies (considering also social-economic factors) Specific to forest ecosystems and landscapes

• **Lessons Learned and recommendations** (Please describe the lessons learned during the process of developing the national C&I set. Feel free to focus on what was most significant for your process, like prioritising indicators, making indicators useful and specific in terms of definition, on making indicators measurable (both qualitative and quantitative), on information gathering, management and use, institutionalizing C&I systems in your country. What would you do differently? What did you learn about the process in your country?)



The process started in late 2016 is still ongoing. The complexity and integrity of approach was applied for different stages of C&I development. Preliminary material took changes for several times trying to interlink different positions. The main conflict was around the optimal number of indicators.

Our solution to divide the process of application into stages. There are a lot of indicators which seems rather complicative and not realistic to apply at this stage, but still we think those are baseline. That's why we consider developing a kind of a "road map" which will allow to combine the application of indicators with some capacity building process.

3. SUMMARY OF THE INDICATORS DEVELOPED – JUST AN OVERVIEW

• **Key criteria and indicators** *(Please review the strategic areas that are considered essential to the forestry sector in your country and how the thematic elements/ principles have been selected for the national C&I set. Please review the criteria and indicators (both qualitative and quantitative) within these thematic elements. You may want to identify and elaborate on some of them which have posed a challenge while developing the national C&I set, or which are significant for your country to measure the progress towards SFM.)*

The main requirement that were used in selection of the C&I thematic elements was to articulate the strategic areas, important to monitor, specific to forestry sector of a country. Those was interlinked with state policy in nature conservation as well as community sustainable development.

It is considering first of all monitoring of forest cover by itself – as a major parameter (indicator 1.1), as our country has obligations to improve the results. It includes also some specific types of forests by their origin, age and management type. Identification and periodic measurements of degradation and fragmentation level for some areas is also priority to understand the threats and contributing factors (Indicators 1.9, 2.6 and 3.2). Climate change issue is also considered.

Another strong commitment is monitoring of the state of biodiversity and its conservation level. Armenia is rich in biodiversity including endemic species. Those are the key characteristics of local flora and fauna (Indicators 2.2 and 2.3).

There are ongoing projects in a country for identification of high conservation value forests and giving them some formal status.

We should not forget about other important ecosystem services provided by forests – their protective functions. Most of forest lands in Armenia has such status, thus requiring specific attention towards them (Criterion 5).

In addition to this social and economical aspects (Indicators 4.2, 4.4 and 6.8) has significance from the point of view prevention of illegal logging and other negative influence on forest ecosystems).

4. IMPLEMENTATION OF THE NATIONAL C&I SET

• **Institutionalisation and Operationalization** *(Please describe the steps that will be undertaken to institutionalise and operationalize the national level C&I set.)*



Adoption of national level C&I set is a major step towards promoting SFM in a country. The major constraint towards achieving the best results is a lack of a monitoring and evaluation procedures for evidence decision making, transparency and accountability. This should be adopted by Government to care an obligatory character for the all of the parties involved in forest and biodiversity monitoring. It also requires serious professional and technical capacity building too.

The central body responsible for analysis is not identified yet. We consider this as a part of ongoing forestry sector improvements started in 2018.

It is required development and adoption of additional legal acts to institutionalize a new system. Dividing functions, work flows, positions including respective budget is another bureaucratic part of work.

• **CHALLENGES for implementing C&I for Sustainable Forest Management** *(Please describe major constraints for implementing C&I for SFM in your country. Please provide recommendations for overcoming these challenges.)*

It became evident that most of the indicators cannot be directly applied for the assessment of SFM as they are very often requiring a set of variables that characterize a thematic area covered by an indicator, whereas reporting on sustainability of forest management requires the specification of a single variable - parameter.

Quantitative characteristics of the indicators are easy task to measure like, forest area, number of species and or biomass production. But qualitative characteristics of indicators are mainly depending on expert judgments, like health, vigor, or satisfaction.

There is a nice tool (SEMAFOR) which support assessment of data for Pan-European criteria, but for other criteria there is still need of such kind of assessment tool.

Data quality is another aspect we should consider towards application of this system. Not only requirements but also some control system should be developed to filter inappropriate and inaccurate information.

• **MONITORING** *(Please describe how the set will be used to monitor the progress towards the achievement of SFM in your country.)*

Development of standard for forest monitoring and evaluation procedures require first of all plan for data migration and harmonization of the various data bases in forestry, protected area management and biodiversity – providing a platform for different types and levels of stakeholders, potential sources of information.

Designing of this data management platform should be done based on international best practices, at the same time considering local specifics (the capacities of institutions and responsibilities of stakeholders). It is not clear yet the control and coordination mechanism, the system of final information providing to decision maker or doing it by themselves.

For several years, remote sensing technologies have been applied for forest monitoring in Armenia. As a results information about forests has become more accessible, is regularly updated and allows to draw conclusions about the major parameters. Development of this



practices as well as IT and AI tools can ensure a basic information for C&I and scenario building.

5. LOOKING AHEAD

- **NEXT STEPS** *(Please describe the actions that will be undertaken in your country to implement the C&I and promote sustainable forest management.)*

Establishment of monitoring and accountability system, which will ensure stable flow of the information is urgently needed. It strives to transparently measure Armenia's progress in achieving national forestry targets and international obligations. It oriented first on increasing forest cover, improving the state of biodiversity conservation at ecosystem and species level also reduction of illegal logging, thus support evidence-based policy making. It can also go along with development of a new national forestry program and forestry sector reforms.

- **FURTHER NEEDS** *(In which areas would your country need further international assistance? Which (5) indicators have the highest priority for your country to be assessed? Which indicators require most urgently thorough methodological development?)*

Considering that the draft C&I set is already ready, now there is need of a strong expert judgment and peer review process to transform it into a real tool. Final prioritization, screening, grouping by implementation stages will be useful.

Harmonization with national strategies is still ongoing, but it requires some navigation on specific characteristics and functions, oriented on protection and promotion of global values but not just solving local issues.

Ecoregional approach also can be an interesting approach to have bigger impact. The main accent can be done on specific forest ecosystem services such as protection services as in a region the forests are mostly mountainous with high conservation value.

Methodological guidebook for their implementation will be useful especially from the point of view data gathering and assessment.

Armenia can become a unique case of a country applying C&I by several stages, thus showing strong willingness to have its own commitment into this global process.



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National-level forest monitoring systems

UNECE/FAO, UNDA project

«Accountability Systems for Sustainable Forest Management in the Caucasus and Central Asia»

Forest Congress for the Caucasus and Central Asia

28 - 31 May 2019, Issyk Kul, Kyrgyzstan

1. BACKGROUND

FOREST DATA *(Please provide a map of your country showing the forest cover, types of forest and any other relevant information you think is important for other participants to understand about the country's forestry situation. Please provide basic data on the country's forest resources.)*

- Around 40% of Georgia is covered by forest (2.8 Million ha);
- The majority of the forest is mountain forest;
- Around 80% of country's forest has important protective functions;
- The Georgian forest is of natural origin, only 2.6 % is planted forest;
- Nearly 8.6% of Georgia (595,963 ha) is declared as protected area, of which 45% (267,000 ha) is covered by forest;
- The conservation of biodiversity is considered not only in protected areas, but also in the management of forest areas outside the protected area system;
- The Emerald Network consists of around 800,000 ha of State Forest Fund;
- 348, 300 ha of forest have been declared as recreation or resort forest;
- Only around 20% (587,500 ha) of Georgia's forests were reported in 2015 as 'forest area available for wood supply';

RATIONALE *(Please provide information about your country's context and purpose for the development and application of criteria and indicators (C&I) for sustainable forest management (SFM).)*

- In the National Forest Concept of Georgia (2013) it is stated that Georgia's forests are an important foundation for the ecological, social and economic development of the country. Irrespective of their form of ownership, Georgia's forests shall be managed based on a system established in accordance with the principles of sustainable development. That will ensure the improvement of quantitative and qualitative parameters of Georgia's forests, the protection of biodiversity, the rational use of forest economic potential taking into consideration its ecological value, public involvement in forest management and access to forest resources;
- C&I for SFM were recognized as useful tool to measure progress towards achieving the national objectives and targets defined in the National Forest Concept (2013).



2. DEVELOPMENT OF NATIONAL C&I SET

Overview of activities *(Please provide an updated overview of activities conducted in your country to develop a national C&I set. Please also describe methods used, the time frame and who was engaged in these activities. Concentrate especially on activities, which were organized besides the UNECE/FAO workshops.)*

- Biodiversity and Forestry department (BFD) of MEPA and international consultants have performed intensive deskwork to develop the set of national C&I;
- The development process started in the framework of the NFP process with the support of GIZ in 2014;
- During 2014 – 2016, five guiding principles of SFM have been agreed (ecological, economic, social, multifunctional, transparency). In addition, the common understanding on ecosystem-based FM (close to nature, sufficiency, and precaution) has been reached. A first draft set of policy and management level C&I was elaborated;
- Since 2016, the C&I were further specified for the political and strategic as well as the management level;
- 11 NFP working group meetings (supported by GIZ) and 4 UNECE/FAO workshops have been conducted since 2014, involving participants from the Government, NGOs and the Academia.

Challenges of developing C&I *(What were the key challenges, lessons and recommendations from the process?)*

- Balancing ecological, social and economic interests;
- Consideration of international and regional sets of C&I;
- Identification of measurable and feasible indicators.

Your country's experiences in selecting C&I

<i>Was the selection of indicators for each criterion a simple or complex process? Please explain the reasons behind.</i>	<ul style="list-style-type: none"> • The identification and formulation of Criteria and respective Indicators was a complex process.
<i>Which stakeholders were involved?</i>	<ul style="list-style-type: none"> • Representatives of management bodies, Government, NGOs and the Academia.
<i>Did the stakeholder have enough experience to propose clear indicators?</i>	<ul style="list-style-type: none"> • The stakeholders participating in the workshops had experience of working in forestry sector. Thus, their contribution was valuable, and it was important to reach a common understanding with them. However, mostly proposed indicators had to be further developed.
<i>Was an excessive number of indicators proposed in the early stages of the process?</i>	<ul style="list-style-type: none"> • Not really, but the different draft sets were reassessed repeatedly. Only those indicators, which are feasible and measurable, were kept.
<i>How many indicators were chosen initially?</i>	<ul style="list-style-type: none"> • We elaborated more than 100 indicators.
<i>How did the number change at later stages and why?</i>	<ul style="list-style-type: none"> • For this moment, we have around 94 indicators.



<p><i>Were they prioritised adequately?</i></p>	<ul style="list-style-type: none"> The Ministry conducted a workshop for prioritisation of C&I the results were positive, and we prioritized it adequately.
<p><i>Were new indicators selected and some old ones abandoned after the 2nd regional workshop and the peer reviews of national C&I set?</i></p>	<ul style="list-style-type: none"> Yes, recommendations given during the workshops were considered and as a result, we improved the list of indicators.
<p><i>What were the determining factors for screening the indicators? (e.i. taking into account their relevance, data availability and cost efficiency). Please add anything relevant to your country.)</i></p>	<ul style="list-style-type: none"> The determining factors for screening the indicators were as follows: feasibility, meaningful, sensitive, measurable, internationally comparable.

Lessons Learned and recommendations *(Please describe the lessons learned during the process of developing the national C&I set. Feel free to focus on what was most significant for your process, like prioritising indicators, making indicators useful and specific in terms of definition, on making indicators measurable (both qualitative and quantitative), on information gathering, management and use, institutionalizing C&I systems in your country. What would you do differently? What did you learn about the process in your country?)*

- Importance of stakeholder participation;
- Reaching common understanding of SFM;
- Further clarification of objectives and targets of NFC;
- Review of relevant regional and international C&I processes and sets;
- Evaluation of potential indicators against requirements like feasibility, data quality, etc.

3. SUMMARY OF THE INDICATORS DEVELOPED – JUST AN OVERVIEW

Key criteria and indicators *(Please review the strategic areas that are considered essential to the forestry sector in your country and how the thematic elements/ principles have been selected for the national C&I set. Please review the criteria and indicators (both qualitative and quantitative) within these thematic elements. You may want to identify and elaborate on some of them which have posed a challenge while developing the national C&I set, or which are significant for your country to measure the progress towards SFM.)*

- Ecological Principle
 - Forest shall be managed as close as possible to the condition of natural forests (Close to nature);
 - Forest use shall not exceed their natural capacity (sufficiency);
 - Management measures shall have minimum negative impact (precautionary);
- Social Principle
 - Provision of employment and income opportunities in rural areas;
 - Covering needs for wood and Non-Wood Forest Products (NWFP);
- Economic principle
 - Maximizing added value from wood processing in Georgia;
 - Multifunctional Principle (cross-cutting)



- Forest shall be managed as an integral part of the sustainable development of the country;
- Ecological, social, economic and other relevant functions of the forest should be harmonized;
- Transparency Principle (cross-cutting)
 - All forest sector relevant activities shall be planned and implemented in consultation with the concerned stakeholders, experts and the interested public.

4. IMPLEMENTATION OF THE NATIONAL C&I SET

Institutionalisation and Operationalization *(Please describe the steps that will be undertaken to institutionalise and operationalize the national level C&I set.)*

- Consideration of principles and main criteria of SFM in the draft Forest Code;
- The adoption of national C&I by the order of Minister in 2019;
- Consideration of C&I in legal framework.

CHALLENGES for implementing C&I for Sustainable Forest Management *(Please describe major constraints for implementing C&I for SFM in your country. Please provide recommendations for overcoming these challenges.)*

- Lack of reliable information on the forest status;
- After independence (1991), under the pressure of shortages of both wood and energy, there was also strong pressure on Georgian forests. A high proportion of logging has been carried out without proper authorization or without any authorization at all and has not been officially recorded (Garforth, et al., 2016). At the same time, there has not been any national or forest district level inventory since the collapse of the Soviet Union. The inventory materials from the Soviet period are outdated and do not reflect the real condition of forests today (The State Audit Office of Georgia, 2016). As a result, it is not possible to quantify recent trends in forest area, growing stock and other characteristics of forest with any certainty.
- Inconsistent legal framework;
- To overcome these challenges in 2012, the government of Georgia adopted the decision on changing formal forest management practices and decided to implement a comprehensive forest sector reform. The draft Forest Code was elaborated with strong stakeholder participation. The new Forest Code is a precondition for modernizing forest management practices according to the principles of sustainable forest management. The National Forest Inventory and the work for establishment of a comprehensive forest information and monitoring are ongoing;
- Lack of capacity for forest management and supervision
- Insufficient number and qualification of employees in forest management and supervision institutions, insufficient financing from the state budget.



MONITORING *(Please describe how the set will be used to monitor the progress towards the achievement of SFM in your country.)*

- Main information from regular NFIs, additional information necessary for monitoring economic and social aspects;
- BFD will collect and analyze the available data (in future available in FIMS) to define gaps and find solutions for enhancement of forest policy;
- Annual reports will be elaborated by BFD to exchange information on the development of the forestry sector as well as implementation of commitments related to SFM.

5. LOOKING AHEAD

NEXT STEPS *(Please describe the actions that will be undertaken in your country to implement the C&I and promote sustainable forest management.)*

- Institutionalisation including
 - The adoption of the new Forest Code in 2019 by the parliament;
 - The adoption of national C&I by the order of Minister in 2019;
 - Consideration of National C&I in the respective legal regulations during 2019-2020;
 - Establishment the Forest Information and Monitoring System (FIMS) during 2019 – 2022;
- Implement the First National Forest Inventory during 2019 – 2021;
- Implement Forest Management Level Inventory and elaborate Forest Management Plans.

FURTHER NEEDS *(In which areas would your country need further international assistance? Which (5) indicators have the highest priority for your country to be assessed? Which indicators require most urgently thorough methodological development?)*

- The elaboration of the factsheets (explanatory notes) for the agreed C&I is the priority for 2019.



KAZAKHSTAN

National-level forest monitoring systems

UNECE/FAO, UNDA project

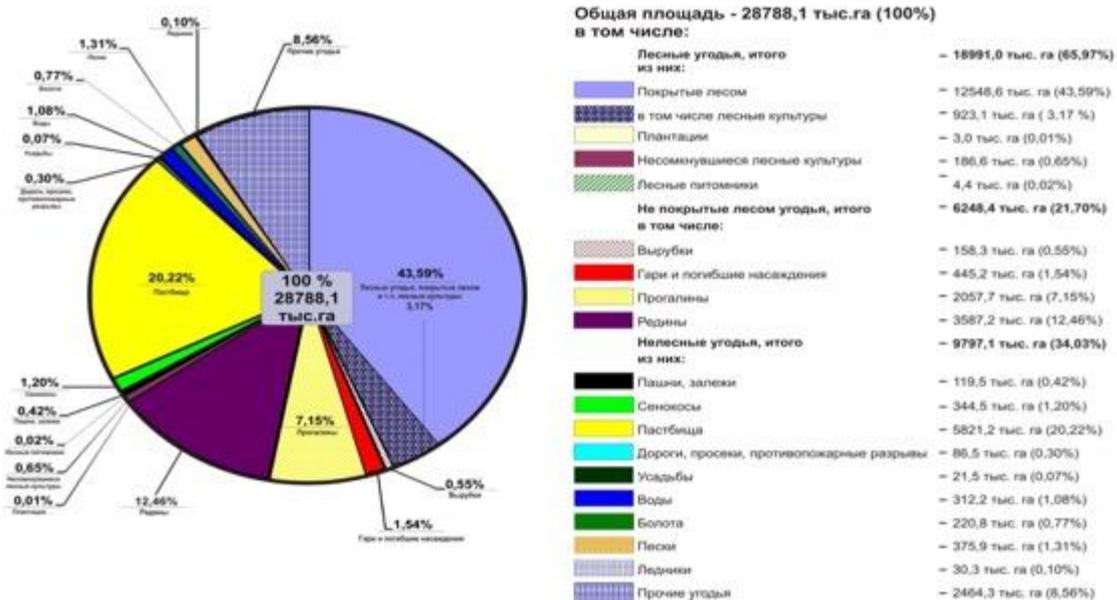
«Accountability Systems for Sustainable Forest Management in the Caucasus and Central Asia»

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1. BACKGROUND

FOREST DATA



As of 01/01/2019, the total area of the state forest fund (hereinafter referred to as the state forest fund) is 30,056.7 thousand hectares and covers 11.0% of the territory of the republic. Forest land covers 12,933.1 thousand hectares or 43.0% of the total forest fund area. The area of private forest fund is 695 hectares, there is no forest covered land. The percentage of forest cover in the republic is 4.7 percent. The largest part of the state forest fund - 74.7% is under the jurisdiction of the regions akimats, 24.6% is under the authority of the Committee. The area of state forest owners subordinate to the Committee is 7,389.8 thousand hectares, of which 7,274.8 thousand hectares are specially protected natural territories with the status of a legal entity (hereinafter referred to as PAs), which include: 10 state Nature Reserves (hereinafter - SNR) - 1,611.4 thousand hectares; 13 state national natural parks (hereinafter referred to as SNNP) - 2539.1 thousand hectares; 6 state natural reserves (hereinafter - GPR) - 3,124.3 thousand hectares;



In addition, under the authority of the Committee:

State Enterprise "Republican Forest Breeding and Seed Center" - 1.6 thousand ha, Sandyktau training and production forestry - 25.9 thousand hectares and RSE "Zhasyl Aymak" - 87.5 thousand hectares;

The regions akimats are in charge of 120 state forestry institutions, the area of which is 22,336.9 thousand hectares, the Syrdarya-Turkestan state regional natural park of the akimat of the South Kazakhstan region with an area of 120.0 thousand hectares;

The Burabay SNNP is in charge of the Office of the President of the Republic of Kazakhstan - 129.3 thousand hectares.

The Ministry of Agriculture of the Republic of Kazakhstan is in charge of KazNIILKHA LLP, NANOTS JSC, Ministry of Agriculture of the Republic of Kazakhstan - 14 hectares;

The Ministry of Investment and Development of the Republic of Kazakhstan is responsible for: protective plantations on the railroad right of way of JSC "NC Kazakhstan "Temir Zholy" - 64.2 thousand hectares;

protective plantations in the roadside areas of JSC "NC "KazAvtoZhol"- 15.7 thousand hectares;

The total area of PA forestry institutions in the republic is 8,270.0 thousand hectares, which include specially protected forest areas of institutions under the Committee's authority, as well as Burabai SNNP of the Administration of the President of the Republic of Kazakhstan and the Syrdarya-Turkestan State Regional Natural Park of South Kazakhstan regions akimat. The area of private forest fund in the republic is 695 hectares - this is "PE Kolosovsky A.P." - 120 hectares, "PE Kolosovsky P.A." - 250 hectares, "PE Kolosovsky S.A." - 250 hectares, "Zelenstroy" IE "Adaykin Y.Y." - 37 hectares, LLP "Baishuak-Umit" Zhauliyeva R.T. - 25 hectares and the newly formed IE "Karpovich A.N." - 6 hectares and LLP "KOKTEREK-A" - 7 hectares. All owners of private forest fund are in Akmola region.

RATIONALE *(Please provide information about your country's context and purpose for the development and application of criteria and indicators (C&I) for sustainable forest management (SFM).)*

Kazakhstan uses a two-tier forest management system of The State Forest Fund (SFF): the republican (national) level and the local (regional) level.

At the national level, forest management is carried out by the Government of the Republic of Kazakhstan through its authorized central executive body, the Ministry of Agriculture. Direct management, economic control and supervision of forests throughout the country is carried out by a specialized body - the Committee for Forestry and Wildlife, which is part of the Ministry of Agriculture and its territorial divisions.

At the regional level, management is carried out by local executive bodies through their subordinate bodies for the management of natural resources, environmental protection and forestry.

In order to coordinate the actions of the above bodies, to develop a unified approach to forest management and a reporting system in the Republic of Kazakhstan, a draft criteria and indicators for sustainable forest management (CI) have been developed.

This project is currently undergoing, in accordance with the procedure established by national legislation, approval procedures.



2. DEVELOPMENT OF NATIONAL C&I SET

Overview of activities *(Please provide an updated overview of activities conducted in your country to develop a national C&I set. Please also describe methods used, the time frame and who was engaged in these activities. Concentrate especially on activities which were organized besides the UNECE/FAO workshops.)*

Since 2016, Kazakhstan has been participating in the implementation of a joint project with the UNECE / FAO “Reporting System for Sustainable Forest Management in the Caucasus and Central Asia”.

The basis of the first national set of criteria and indicators for SFM Kazakhstan was adopted a set of criteria and indicators of the SFM of the Montreal process, as the most acceptable for national conditions.

In February 2017, the first national set of C & I SFM was developed and sent for review to interest central government agencies, local executive bodies, and non-governmental organizations for feedback and comments.

The first national workshop was held in June 2017 and, following its results, an updated draft of national criteria and indicators for SFM was prepared.

This set was presented at the regional cluster meetings with the participation of interested parties and the authorized body (FWC MA RK).

During the discussion of the criteria and indicators, they were finalized and sent for consideration to all interested organizations. Following a set of proposals and comments from interested organizations, the set was finalized and presented at a regional seminar in Tbilisi in February 2018.

A new set of C & I for the SFM included 13 indicators according to 4 criteria. Recommendations on the set of criteria and indicators presented in Tbilisi became the basis of the second national seminar.

The next National Workshop “Criteria and Indicators for Sustainable Forest Management for Kazakhstan” was held on September 26-28, 2018 in Astana, Kazakhstan. This was the second national workshop for Kazakhstan in the framework of the UNECE / FAO, UNDP project “Reporting Systems for Sustainable Forest Management in the Caucasus and Central Asia”.

The workshop was attended by 21 national experts from various organizations to discuss, share experiences, identify needs, and formulate recommendations for future work on criteria and indicators for sustainable forest management in Kazakhstan.

This set was presented at the regional cluster meetings with the participation of interested parties and the authorized body (FWC MA RK).

Challenges of developing C&I *(What were the key challenges, lessons and recommendations from the process?)*

Your country’s experiences in selecting C&I

<p><i>Was the selection of indicators for each criterion a simple or complex process? Please explain the reasons behind.</i></p>	<ul style="list-style-type: none"> • When developing indicators, the most difficult issues were the question of
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	assessing and measuring indicators, the availability of methodologies
<i>Which stakeholders were involved?</i>	<ul style="list-style-type: none"> State bodies responsible for the state forest fund, regional akimats, state forestry institutions, non-governmental organizations
<i>Did the stakeholder have enough experience to propose clear indicators?</i>	<ul style="list-style-type: none"> There was practically no experience in developing criteria among stakeholders at the time of their development, since this system is being developed in Kazakhstan for the first time. During the discussion at national and cluster seminars, the specialists were introduced to new approaches, best international practices and developed a unified national approach.
<i>Was an excessive number of indicators proposed in the early stages of the process?</i>	<ul style="list-style-type: none"> Since the Montreal Process (25 indicators) was adopted at the initial stage, an excessive number of indicators were proposed
<i>How many indicators were chosen initially?</i>	<ul style="list-style-type: none"> During the study of the issue, 17 indicators most acceptable for Kazakhstan were selected.
<i>How did the number change at later stages and why?</i>	<ul style="list-style-type: none"> At the final stage, 13 indicators were prepared for approval.
<i>Were they prioritised adequately?</i>	<ul style="list-style-type: none"> Priorities are built in accordance with national forest legislation.
<i>Were new indicators selected and some old ones abandoned after the 2nd regional workshop and the peer reviews of national C&I set?</i>	<ul style="list-style-type: none"> No
<i>What were the determining factors for screening the indicators? (e.i. taking into account their relevance, data availability and cost efficiency). Please add anything relevant to your country.)</i>	<ul style="list-style-type: none"> Determining factors: feasibility, accessibility, availability of methods and assessment possibilities (validation), applicability in Kazakhstan

Lessons Learned and recommendations *(Please describe the lessons learned during the process of developing the national C&I set. Feel free to focus on what was most significant for your process, like prioritising indicators, making indicators useful and specific in terms of definition, on making indicators measurable (both qualitative and quantitative), on information gathering, management and use, institutionalizing C&I systems in your country. What would you do differently? What did you learn about the process in your country?)*



In the process of preparing national indicators, the Pan-European and Montreal Processes were introduced, in the study of which the Montreal Process was selected as the most appropriate for Kazakhstan.

In addition, considering national legislation, indicators on their priority were built, and the availability of national and international methods for the measurability of indicators was also considered.

During the development of national indicators, the question of the possibility of collecting data and analyzing them was worked out.

3. SUMMARY OF THE INDICATORS DEVELOPED – JUST AN OVERVIEW

Key criteria and indicators *(Please review the strategic areas that are considered essential to the forestry sector in your country and how the thematic elements/ principles have been selected for the national C&I set. Please review the criteria and indicators (both qualitative and quantitative) within these thematic elements. You may want to identify and elaborate on some of them which have posed a challenge while developing the national C&I set, or which are significant for your country to measure the progress towards SFM.)*

The strategic areas in the field of forestry in Kazakhstan are:

1. Preservation of the forest fund, its reproduction and rational use of tree resources.
2. Inventory of forests.
3. Development of private afforestation, plantation cultivation and private forest nurseries.
4. Creating green areas around regional centers and landscaping of all settlements.
5. The introduction of new technologies to combat forest fires, pests and forest diseases.

4. IMPLEMENTATION OF THE NATIONAL C&I SET

Institutionalisation and Operationalization *(Please describe the steps that will be undertaken to institutionalise and operationalize the national level C&I set.)*

The CI set will be approved by the order of the Chairman of the Committee for Forestry and Wildlife of the Ministry of Agriculture of the Republic of Kazakhstan, registered with the Ministry of Justice and sent to guide all interested bodies and non-governmental organizations.

CHALLENGES for implementing C&I for Sustainable Forest Management *(Please describe major constraints for implementing C&I for SFM in your country. Please provide recommendations for overcoming these challenges.)*

- When developing indicators, the most difficult issues were the question of assessing and measuring indicators, the availability of methodologies
- Since the Montreal Process (25 indicators) was adopted at the initial stage, an excessive number of indicators were proposed



MONITORING *(Please describe how the set will be used to monitor the progress towards the achievement of SFM in your country.)*

Information on the achievement of indicators will be provided annually to the authorized body in the field of forestry, for their further analysis and development of recommendations and decision-making.

In addition, according to the presented indicators, the activities of a government body in the field of forestry will be assessed.

5. LOOKING AHEAD

NEXT STEPS *(Please describe the actions that will be undertaken in your country to implement the C&I and promote sustainable forest management.)*

To achieve the indicators, the interested state bodies will take into account in budget requests the financial costs of implementing activities in the field of sustainable forest management.

FURTHER NEEDS *(In which areas would your country need further international assistance? Which (5) indicators have the highest priority for your country to be assessed? Which indicators require most urgently thorough methodological development?)*

I. Kazakhstan is interested in methodical assistance in the field of strategic development of forestry (preparation of a draft program document for the medium term)

II. High priority indicators for Kazakhstan:

1. Distribution of the state forest fund areas by main forest forming species.
2. The total stock of wood in forests.
3. The area and the stock of wood in private forest fund.
4. The volume of annual timber harvesting in the context of all types of logging.
5. The area of forests infected with pests, forest diseases, including invasive species.
6. The area of forests passed by forest fires.

III. Further international assistance will be required to develop a methodology for the following indicators:

1. The volume of capital investments and annual expenditures on forestry, production of wood and non-wood products provided by the forest, environmental services, recreation and tourism.
2. Annual investments and expenses from the state budget:
 - for research on forest topics;
 - to education.
3. Area and percentage of forests available and / or managed for recreation and tourism.
4. The cost and the number of visits to the forest fund associated with recreation and tourism.



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KYRGYZSTAN

National-level forest monitoring systems

UNECE/FAO, UNDA project

«Accountability Systems for Sustainable Forest Management in the Caucasus
and Central Asia»

Forest Congress for the Caucasus and Central Asia

28 - 31 May 2019, Issyk Kul, Kyrgyzstan

1. BACKGROUND

- **FOREST DATA** *(Please provide a map of your country showing the forest cover, types of forest and any other relevant information you think is important for other participants to understand about the country's forestry situation. Please provide basic data on the country's forest resources.)*
 - The forests of Kyrgyzstan are environmental protection and perform mainly water protection, water regulation, soil protection, sanitary and hygienic, recreational, recreational and other functions.
 - Forest ecosystems of the Kyrgyz Republic are represented by four species: walnut, spruce, juniper and floodplain forests.
 - As of 01.01.2008, the total area of land of the State Forest Fund amounted to 3 million 533.1 thousand hectares (16% of the total area of the republic).
 - According to the Resolution of the Government of the Kyrgyz Republic dated July 26, 2011 No. 407 "On approval of the results of the National Forest Inventory of the Kyrgyz Republic", the forest cover is 5.61%. "The land, its subsoil, airspace, water, forests, flora and fauna, other natural resources are the exclusive property of the Kyrgyz Republic, are used to preserve a single ecological system as the basis of life and activity of the people of Kyrgyzstan and are under special state protection" (the Constitution KR Art.12 p.5).
 -
- **RATIONALE** *(Please provide information about your country's context and purpose for the development and application of criteria and indicators (C&I) for sustainable forest management (SFM).)*
 - The goal is sustainable forest management. For the development of sustainable forest management, it is necessary to simultaneously consider economic, social and environmental factors.
 - Economic:
 - A productive and efficient forest sector optimizes the use and creation of added value, improves livelihoods and creates jobs.
 - Social:
 - The participation of all stakeholders. Ownership and guarantee of property rights. Good forest management - ensuring transparency and equity.



- Ecological:
- Health, biodiversity and sustainability of forest ecosystems are supported in the long term. Forest products and services are fully recognized and promoted as a “green” alternative to fossil energy-based energy and products.

2. DEVELOPMENT OF NATIONAL C&I SET

- **Overview of activities** *(Please provide an updated overview of activities conducted in your country to develop a national C&I set. Please also describe methods used, the time frame and who was engaged in these activities. Concentrate especially on activities which were organized besides the UNECE/FAO workshops.)*
 - As part of the three-year UNECE / FAO Accountability System for Sustainable Forest Management in the Caucasus and Central Asia, with the support of the UNECE / FAO Forestry and Timber Section in Kyrgyzstan, work is under way to develop a National CI Kit. Two national workshops were held with the participation of all stakeholders.
 - Also, advisory workshops at the local level were held in the Jalal-Abad oblast (Kyzyl-Unkur, Arstanbap-Ata forestry, March 2018) with the participation of leshoz staff and forest users. Recommendations received at local workshops were reviewed at the Second National Workshop.
 - At workshops in the leshozes of Talas oblast (November 2018), the main tasks were explained, why and why data collection is necessary. Since the main part of the seminar participants were tenants of the state forest fund lands, the emphasis was on the role of forest users, which they play in forest management.
- **Challenges of developing C&I** *(What were the key challenges, lessons and recommendations from the process?)*

Problems:

 - Some indicators are repeated.
 - It is necessary to formulate criteria and indicators more clearly; criteria should be reformulated as “target”
 - Indicators difficult to measure, confused with criteria
 - Some important indicators missing that are in line with forest policy priorities; additional indicators of national importance need to be developed
 - Low realism of data collection, in particular, on non-wood forest products from local residents and the market
 - When developing indicators, consider the cost-effectiveness of the data collection process
 - Supplement with indicators reflecting relations between forest management bodies and forest users.

Recommendations:

 - - to formulate more specific indicators for politicians;
 - - some indicators, such as ecosystem services, divided by items, concretized;
 - - use clear and precise methods;
 - - Difficult indicators to reformulate radically;
 - - add environmental education;



- - strengthen the role of forest users;
- - increase constancy, feasibility;
- - indicators should be more consistent and consistent;
- - Indicators should be more focused on private sector development;
- - use simple language that is understandable for politicians and the general public.

• **Your country's experiences in selecting C&I**

<ul style="list-style-type: none"> • <i>Was the selection of indicators for each criterion a simple or complex process? Please explain the reasons behind.</i> 	<p>The selection of indicators was not very simple, since the existing criteria and indicators may reflect the state of natural ecosystems, but do not show the level of management efficiency and there are problems with data availability</p>
<ul style="list-style-type: none"> • <i>Which stakeholders were involved?</i> 	<p>Forest management bodies, NGOs, forest users, representatives of science</p>
<ul style="list-style-type: none"> • <i>Did the stakeholder have enough experience to propose clear indicators?</i> 	<p>There is an experience but not very big and not at all, for the majority of participants this is a new topic</p>
<ul style="list-style-type: none"> • <i>Was an excessive number of indicators proposed in the early stages of the process?</i> 	<p>There were indicators duplicating each other</p>
<ul style="list-style-type: none"> • <i>How many indicators were chosen initially?</i> 	<p>Initially, 41 indicators were formed according to 6 criteria</p>
<ul style="list-style-type: none"> • <i>How did the number change at later stages and why?</i> 	<p>In the last set of 54 indicators, the number has changed as a result of local and local workshops held</p>
<ul style="list-style-type: none"> • <i>Were they prioritised adequately?</i> 	<p>Yes, priorities have been set</p>
<ul style="list-style-type: none"> • <i>Were new indicators selected and some old ones abandoned after the 2nd regional workshop and the peer reviews of national C&I set?</i> 	<p>Indicators have been reformulated.</p>
<ul style="list-style-type: none"> • <i>What were the determining factors for screening the indicators? (e.i. taking into account their relevance, data availability and cost efficiency). Please add anything relevant to your country.)</i> 	<p>The determining factor was the availability of data, cost-effectiveness and current relevance</p>

- **Lessons Learned and recommendations** *(Please describe the lessons learned during the process of developing the national C&I set. Feel free to focus on what was most significant for your process, like prioritising indicators, making indicators useful and specific in terms of definition, on making indicators measurable (both qualitative and quantitative), on*



information gathering, management and use, institutionalizing C&I systems in your country. What would you do differently? What did you learn about the process in your country?)

- During the development process, it was found out that earlier work was carried out to define criteria and indicators in walnut and juniper forests, but there was no institutionalization process and the results of this work were not used. In the long-term plan of SAEPF, criteria and indicators were determined that describe mainly the state of natural ecosystems.
- For us, it was important to determine the criteria that could show the level of efficiency of forest management and the inclusion of social and economic issues. It is also necessary to work on specifying CI to increase the measurability and reliability of data. It is important to determine CIs showing the activity of forest users and their contribution.

3. SUMMARY OF THE INDICATORS DEVELOPED – JUST AN OVERVIEW

- **Key criteria and indicators** *(Please review the strategic areas that are considered essential to the forestry sector in your country and how the thematic elements/ principles have been selected for the national C&I set. Please review the criteria and indicators (both qualitative and quantitative) within these thematic elements. You may want to identify and elaborate on some of them which have posed a challenge while developing the national C&I set, or which are significant for your country to measure the progress towards SFM.)*

Since the Kyrgyz Republic is a low forest country and existing forests play a mainly conservation role, the main activity of the forest sector is to increase the area covered by forests and to protect and protect existing forests, preserve forest biodiversity.

In light of the reform of the forest sector, a new legislative framework for sustainable forest management is to be developed.

The greatest difficulty is Criterion 5 - The political, legislative and institutional framework in sustainable forest management, the indicators are rather vague and need to be simplified and concretized.

4. IMPLEMENTATION OF THE NATIONAL C&I SET

- **Institutionalisation and Operationalization** *(Please describe the steps that will be undertaken to institutionalise and operationalize the national level C&I set.)*

An updated set of C & I will be presented for discussion after the work on improving the formulation, eliminating duplication and analyzing the possibility of obtaining objective data from real sources.

The national C & I set should be used by the republican forestry management body for annual reporting, which will allow for a comparative analysis of data by year over a certain period of time and to draw certain conclusions in which direction it is necessary to go further to achieve good results in managing the industry.

For the institutionalization of the National Recruitment Committee, an order of the SAEPF will be issued.

- **CHALLENGES for implementing C&I for Sustainable Forest Management** *(Please describe major constraints for implementing C&I for SFM in your country. Please provide recommendations for overcoming these challenges.)*



It is difficult to obtain reliable data on the activities of forest users. In order for people to provide data, it is necessary to conduct explanatory work and make efforts to improve the position of forest users and protect their rights, while not forgetting to defend state interests. It is necessary to create such political and institutional frameworks that would contribute to improving the economic situation of the population without damaging the forests. Need political will.

- **MONITORING** *(Please describe how the set will be used to monitor the progress towards the achievement of SFM in your country.)*

It is planned to use the National C & I Kit for annual data collection and reporting. The national C & I set should be used by the republican forestry management body for annual reporting, which will allow for a comparative analysis of data by year over a certain period of time and to draw certain conclusions in which direction it is necessary to go further to achieve good results in managing the industry.

5. LOOKING AHEAD

- **NEXT STEPS** *(Please describe the actions that will be undertaken in your country to implement the C&I and promote sustainable forest management.)*

Using a preliminary set of C & I, it is necessary to systematize and align with indicators of the Sustainable Development Goals, as well as indicators of documents of national and sectoral significance aimed at sustainable development and the achievement of certain goals. Since at the moment the forest industry of the Kyrgyz Republic is faced with the task not only to preserve and increase forests but also to increase the economic and social importance of using forest resources primarily in the eyes of policy makers, the CI set should be formulated in the simplest and most understandable language, but at the same time be as informative and objective as possible.

It is important to have data sources; how realistic it is to obtain reliable relevant data under existing conditions. Kit for international reporting should be mandatory; for internal use, a set of Kit can be supplemented and changed depending on the goals and objectives that the forest industry of the republic sets for itself in a certain period.

- **FURTHER NEEDS** *(In which areas would your country need further international assistance? Which (5) indicators have the highest priority for your country to be assessed? Which indicators require most urgently thorough methodological development?)*

High priority indicators:

- 1.4. The area of forest land transferred for rental use, including forest covered and the number of forest users.
- 2.4. The area of forest areas designed to preserve or maintain the genetic diversity of forests (including nurseries, arboreta, plantations of especially valuable species, seed banks and others).
- 3.5. Annual volume of afforestation and reforestation
- 4.1. The share of the forest industry in the gross national product.
- 4.7. Development of alternative sources of income for the local population.



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The most thorough methodological development requires indicators Criterion 5 - Political, legislative and institutional framework in sustainable forest management.

International assistance may be required for methodological development of indicators and validation of data collection (one or two years). Funding may also be required to issue a reporting informational compendium. The collection could also be used by decision makers of the executive branch and deputies of the Parliament.



UZBEKISTAN

National-level forest monitoring systems

UNECE/FAO, UNDA project

«Accountability Systems for Sustainable Forest Management in the Caucasus and Central Asia»

Forest Congress for the Caucasus and Central Asia

28 - 31 May 2019, Issyk Kul, Kyrgyzstan

1. BACKGROUND

- **FOREST DATA** (Please provide a map of your country showing the forest cover, types of forest and any other relevant information you think is important for other participants to understand about the country's forestry situation. Please provide basic data on the country's forest resources.)

Republic of Uzbekistan

FORESTS

Uzbekistan

BASIC COUNTRY DATA

Official name: Republic of Uzbekistan
 Population (2018): 32,9 million
 Area: 44,7 million km²
 Location: Kazakhstan, Turkmenistan, Tajikistan, Kyrgyzstan, Afghanistan
 Share of rural residents: 49,3 %
 Climate: dry, sharply continental.
 Forest estate: 11,4 million ha
 Forested area: 3,3 million ha
 Forest cover: 7,2 %
 Forest per inhabitant: 0,10 %
 Ecosystems: 7
 Flora: 4,500 species (9% endemic)
 Fauna: 14,900 species of invertebrates, vertebrates
 Protected Natural Territories: 3.5 million hectares

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RATIONALE (Please provide information about your country's context and purpose for the development and application of criteria and indicators (C&I) for sustainable forest management (SFM).)

In Uzbekistan, forests, like in other Central Asian countries, possess mainly protective function and play an important role in combating desertification, preventing erosion and other natural disasters, as well as protecting irrigated agricultural lands and pastures from degradation. They have a significant impact on other sectors of the national economy, such as agriculture, livestock and water conservation.

A significant part of the population of Uzbekistan lives in rural areas, and its life and well-being are directly connected with forests and other categories of land of the SFF. Due to insufficient



institutional capacity and the management system, there are cases of unrecorded felling for fuel purposes and uncontrolled grazing, which is a cause of forest degradation.

The President of Uzbekistan Shavkat Mirziyoyev pointed during a 2017 message to Parliament out that there is a need to develop criteria and indicators for assessing the effectiveness of state bodies in Uzbekistan.

Based on this message of the President, the State Committee of Forestry in Uzbekistan organized workshops at the local level to develop this specific criteria and indicator set for sustainable forest management.

2. DEVELOPMENT OF NATIONAL C&I SET

Overview of activities *(Please provide an updated overview of activities conducted in your country to develop a national C&I set. Please also describe methods used, the time frame and who was engaged in these activities. Concentrate especially on activities which were organized besides the UNECE/FAO workshops.)*

A delegation of Uzbekistan participated in Inception Workshop on C&I for SFM held November 2016, in Yerevan, Armenia. The first national workshop on C&I for SFM held 2-4 August 2017, in Tashkent, Uzbekistan.

A working group with related ministries and agencies was formed in August 2017 in Tashkent, Uzbekistan. Workshops on the local level on the C&I process for SFM for Uzbekistan were held in October –November 2017 in Samarkand and Surkhandarya region.

A delegation of Uzbekistan participated in joint 75th session of the UN Economic Commission for Europe (UNECE) Committee on Forests and the Forest Industry (COFFI) and the 39th session of the Food and Agriculture Organization of the UN (FAO) European Forestry Commission (EFC), which convened from 9-12 October 2017, in Warsaw, Poland. A selection of key indicators from the 211 indicators under 26 criteria to the 14 criteria and 49 proposed indicators in November 2017 was presented there. The reason of decreasing number of criteria and indicators was comments and recommendations of experts. According to experts and working group recommendations, a lot of proposed indicators shifted to sub indicators list as well.

A delegation from Uzbekistan participated in Regional Interim Workshop of the UNECE/FAO, UNDA project “Accountability Systems for Sustainable Forest Management in the Caucasus and Central Asia”, 20-23 February 2018 in Tbilisi, Georgia.

After that the working group started to develop a draft of resolution of the State Committee on Forestry of the Republic of Uzbekistan on an evaluation process according to the developed C&I for SFM. By accepting this resolution developed C&I will exist to implementation.

The second national workshop on “C&I for SFM for Uzbekistan” was held 8-10 August 2018, in Tashkent, Uzbekistan. During the workshop skills in identifying measurement units and methods for data collection were developed. Overlaps in the C&I set were removed, and formulation of some indicators improved. In addition, key problems/concerns and concrete recommendations for their resolution were identified.

In December 2018, January and April 2019 project of developed C&I presented to specialists of concerned ministries and agencies.

In May 2019 final list of C&I had sent to ministries and agencies to receive their feedback.



Challenges of developing C&I (What were the key challenges, lessons and recommendations from the process?)

Lack of skilled specialists in this sphere was real problem. It was very difficult to receive feedback from related ministries and agencies. So, we tried to present draft of developed list of C&I to stakeholders.

Lack of implementing mechanisms of C&I

Your country's experiences in selecting C&I

<ul style="list-style-type: none"> Was the selection of indicators for each criterion a simple or complex process? Please explain the reasons behind. 	
<ul style="list-style-type: none"> Which stakeholders were involved? 	<ul style="list-style-type: none"> Ministry of Agriculture? Cadastre Committee, Ecology Committee, Statistic Committee, Ministry
<ul style="list-style-type: none"> Did the stakeholder have enough experience to propose clear indicators? 	<ul style="list-style-type: none"> No
<ul style="list-style-type: none"> Was an excessive number of indicators proposed in the early stages of the process? 	<ul style="list-style-type: none"> No
<ul style="list-style-type: none"> How many indicators were chosen initially? 	<ul style="list-style-type: none"> Full criteria and indicator set as 7 criteria, 37 indicators and 47 sub indicators
<ul style="list-style-type: none"> How did the number change at later stages and why? 	<ul style="list-style-type: none"> After discussion with International consultants and direct related ministries and agencies
<ul style="list-style-type: none"> Were they prioritised adequately? 	<ul style="list-style-type: none"> Yes
<ul style="list-style-type: none"> Were new indicators selected and some old ones abandoned after the 2nd regional workshop and the peer reviews of national C&I set? 	<ul style="list-style-type: none"> Yes
<ul style="list-style-type: none"> What were the determining factors for screening the indicators? (e.i. taking into account their relevance, data availability and cost efficiency). Please add anything relevant to your country.) 	<ul style="list-style-type: none"> Combating desertification and land degradation

Lessons Learned and recommendations (Please describe the lessons learned during the process of developing the national C&I set. Feel free to focus on what was most significant for your process, like prioritising indicators, making indicators useful and specific in terms of definition, on making indicators measurable (both qualitative and quantitative), on information gathering, management and use, institutionalizing C&I systems in your country. What would you do differently? What did you learn about the process in your country?)



We learned how to do screening selected C&I. Most of selected C&I was difficult to implement.

3. SUMMARY OF THE INDICATORS DEVELOPED – JUST AN OVERVIEW

Key criteria and indicators *(Please review the strategic areas that are considered essential to the forestry sector in your country and how the thematic elements/ principles have been selected for the national C&I set. Please review the criteria and indicators (both qualitative and quantitative) within these thematic elements. You may want to identify and elaborate on some of them which have posed a challenge while developing the national C&I set, or which are significant for your country to measure the progress towards SFM.)*

Indicator: Economic contribution of the forest sector

4. IMPLEMENTATION OF THE NATIONAL C&I SET

Institutionalisation and Operationalization *(Please describe the steps that will be undertaken to institutionalise and operationalize the national level C&I set.)*

After receiving conclusions of related ministries and agencies we will organize final workshop where we can discuss steps which will be undertaken to institutionalization and operationalization the national level.

CHALLENGES for implementing C&I for Sustainable Forest Management *(Please describe major constraints for implementing C&I for SFM in your country. Please provide recommendations for overcoming these challenges.)*

To implement most of C&I requires to develop methodology.

MONITORING *(Please describe how the set will be used to monitor the progress towards the achievement of SFM in your country.)*

If implementation mechanism works well, it helps to improve SFM

5. LOOKING AHEAD

NEXT STEPS *(Please describe the actions that will be undertaken in your country to implement the C&I and promote sustainable forest management.)*

- First step: After receiving conclusions of related ministries and agencies we will organize final workshop.
- Second step: After final discussions we will prepare draft of Resolution of Cabinet Ministry and will send it to Cabinet Ministry.
- Third step: To work with Cabinet Ministry

FURTHER NEEDS *(In which areas would your country need further international assistance? Which (5) indicators have the highest priority for your country to be assessed? Which indicators require most urgently thorough methodological development?)*



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- *To organize final Workshop on development implementation strategy or mechanisms*



Annex 4. National criteria and indicator sets for SFM

ARMENIA

National criteria and indicator set for SFM

as of February 2019

Criterion 1: Forest Area

- 1.1 Area of forest and other wooded land
- 1.2 Share of forest and other wooded land of the country's total area
- 1.3 The share of forest and forest lands under a forest management plan
- 1.4 Forests area under protection, with special significance and for production
- 1.5 Forest area within protected areas
- 1.6 Area of natural and artificial reforestation and afforestation
- 1.7 Age structure distribution of forest and other wooded land
- 1.8 Forest carbon balance and biomass stock in forest and other wooded land
- 1.9 Area of degraded forests

Criterion 2: Biodiversity

- 2.1 Area of high conservation value forests
- 2.2 Species diversity (diversity index)
- 2.3 Density of endemic species
- 2.4 Area occupied by invasive species and their density
- 2.5 Number of threatened forest species classified according to IUCN National Red List categories in relation to total number of forest species
- 2.6 Fragmentation of forests (number and area of fragments)

Criterion 3: Forest Health

- 3.1 Forest area damaged by fire, pests and diseases
- 3.2 Forests area threatened directly by human activities (loggings, fires, *forest products harvesting*, mining, other economic activities which did not pass the Environmental Impact Assessment)¹⁵

Criterion 4: Productive functions of forest resources

- 4.1 Net annual increment in forest
- 4.2 Annual wood production derived from sustainably managed forests
- 4.3 Total annual wood removals and area of removals, including timber and fuel wood
- 4.4 Volume and consumption of non-wood forest products

Criterion 5: Protective functions of forests

¹⁵ <https://www.arlis.am/documentview.aspx?docid=91594>



- 5.1 Area and percent of forest whose designation or land management focus is the protection of soil or water resources
- 5.2 Area of forest cover in watersheds

Criterion 6: Socio-economic functions of forest resources

- 6.1 Volume of import and export of timber and wood products
- 6.2 Profit of forest enterprises
- 6.3 Number of persons employed in the forest sector, classified by gender, age groups and education
- 6.4 Capacity building of the workforce in the forest sector
- 6.5 Average salary of employees in the forest sector
- 6.6 Environmental awareness raising of forest neighboring communities
- 6.7 Mechanisms for the equitable sharing of the costs and benefits of forest management
- 6.8 Annual consumption of marketed non-wood forest products
- 6.9 Value of marketed services on forest and other forest lands
- 6.10 Procedures to ensure the health and safety of forest workers

Criterion 7: Legal, policy and institutional framework

- 7.1 Presence of forest policy and National Forest Program
- 7.2 Presence of forest monitoring plans and report on an annual basis
- 7.3 Presence of an action plan to expand the forest cover
- 7.4 Policies and regulations that are supporting SFM
- 7.5 Presence of a system of performance and reporting on international obligations
- 7.6 Public participation in the discussions on drafting legal acts
- 7.7 Application of legislation on sustainable forest management
- 7.8 National and international public and other funding committed to SFM
- 7.9 Taxation, financial and economic tools that are supporting the sustainable management of forests
- 7.10 National Forest Management Information System
- 7.11 Presence of forest and forest land cadaster
- 7.12 Forestry research programs (quantity)
- 7.13 Availability of biennial reports on greenhouse gas inventories
- 7.14 Improved and new technologies that are supporting SFM (quantity)



GEORGIA

Final set of national criteria and indicator for SFM – Georgia

As of March 2019

Criterion	Indicator	Measurement units	Data sources
Ecological Principle			
1. The area covered by forest in Georgia is maintained.	1.1. Total forest area	Ha	Forest cover map. (Sentinel 2, 10m resolution). In combination with a visual pre-assessment of the plots using international forest definitions
	1.2. Forest area as proportion of total land area	% of total area of Georgia	
	1.3. Forest area annual net change rate	Forest area (ha) lost. Forest area (ha) gained.	Info from Forest Management Bodies; Better: FIMS a) from Central Forest Register; b) from FIMS Forest activity records; from FIMS Incident recording module using RS based forest loss and gain detection
	1.4. Forest area available for wood supply	ha, % of total forest area	Forest categories 2.9.3.1 (GIS info) From FIMS: Forest Function Mapping/Zoning Module; step by step improved during each Forest Management Plan
	1.5. Forest area within legally established protected areas (including Emerald sites)		FIMS and Forest Atlas/portal
	1.6. Primary forest area = Forest area undisturbed by man		FMP/FIMS/Portal
	1.7. Protective forest area		
	1.8. Recreation forest area		
	1.9. Proportion of forest area under long-term forest management plans		
2. The natural biodiversity of the forests in Georgia is maintained and enhanced	2.1. Naturally regenerated forest area	ha, % of total forest area	FMP/FIMS/Portal
	2.2. Planted forest area		
	2.3. Tree species composition/diversity		NFI/FMP/FIMS/Portal



Criterion	Indicator	Measurement units	Data sources	
	2.4. Abundance/frequency of endemic tree species			
	2.5. Abundance/frequency of introduced tree species and share of invasive tree species			
	2.6. Abundance/frequency of endangered tree species/red list tree species			
	2.7. Structure of forest stands classified according to number of layers (vertical structure) and stem distribution (horizontal structure)	Ha per class of layers (1, 2, multiple) Ha per class according to stem distribution		
	2.8. Abundance/frequency of habitat trees	m ³ /ha % of growing stock		NFI/FMP/FIMS/Portal
	2.9. Standing dead wood	m ³ /ha and decay class		
	2.10. Lying dead wood			
2.11. Area/proportion of old-grown forest	ha, % of total forest area			
3. The vitality of the forests in Georgia is maintained and enhanced ensuring the protective functions of the forest	3.1. Regeneration capacity of forest stands classified by different tree species, height classes, damage and health	Per ha	NFI/FMP/FIMS/Portal	
	3.2. Forest damage by abiotic, biotic and anthropogenic causes classified by different tree species, causes and severity of damage	% of total forest area Ha		
	3.3. Forest land degradation classified by driver and severity of degradation	Area (ha) of degraded forest		
4. The productivity of Georgia's forest is enhanced	4.1. Standing volume of wood classified by tree species compared with standing volume of the respective natural forest type	m ³ /ha % of standing volume of respective natural forest type	NFI/FMP/FIMS/Portal	
	4.2. Increment of timber classified by tree species compared with increment in the respective natural forest type	m ³ /ha % of increment of respective natural forest type		
	4.3. Age class distribution in even-aged forest stands classified by tree species	ha/tree species and age class		
	4.4. Diameter distribution in even-aged and uneven-aged forests classified by tree species	ha/tree species and diameter class		



Criterion	Indicator	Measurement units	Data sources
5. The contribution of Georgia's forests to the carbon cycles is enhanced	5.1. Carbon stock in forest biomass above ground	T/ha	NFI/FMP/FIMS/Portal
	5.2. Carbon stock in forest biomass below ground		NFI/FIMS/Portal
	5.3. Carbon stock in litter		
	5.4. Carbon stock in dead wood (lying dead wood, standing dead wood, stumps)		
	5.5. Carbon stock in soil		
	5.6. Carbon stock in harvested wood products		
	5.6. Share of wood-based energy in total primary energy consumption	%	Ministry of Economy. FIMS/Portal
Economic Principle			
6. The productive function of Georgia's forests is maintained on a sustainable level	6.1. Volume of harvested wood from authorised cutting classified by tree species and quality	m ³ /tree species and quality	FIMS/Portal
	6.2. Volume of wood damaged by abiotic and biotic factors	% of increment	
	6.3. Volume of illegally harvested wood classified by tree species and quality		
	6.4. Total volume of legally and illegally harvested wood and wood from unplanned incidents compared with increment (see indicator 4.2) classified by tree species		
	6.5. Value of roundwood (including fuel wood) legally and illegally obtained from Georgia's forests	Per tree species and year: GEL/m ³ /diff qualities	
	6.6. Consumption of wood (including fuelwood) and products derived from wood	m ³ roundwood equivalent m ³ / household	
	6.7. Imports and exports of wood (including fuel wood) and products derived from wood	m ³ roundwood equivalent for diff. products	Ministry of economy/Revenue service/ Portal
7. The processing of timber in Georgia is promoted	7.1. Number, territorial distribution and operating capacity of secondary wood processing facilities (e.g. carpentries, enterprises)	N/m ³ % of secondary wood processing facilities in rural areas	MoF/ Public Registry/Portal



Criterion	Indicator	Measurement units	Data sources
8. The contribution of the forest sector to the Georgian economy is increased on a sustainable basis and acknowledged	8.1. Contribution of the forest sector to the GDP classified by: – Wood products – Non-Wood Forest Products (NWFP) – Marketed Services (see indicator 10.1)	GEL/ year %/ year	FIMS/Portal/Ministry of economy/revenue service
	8.2. State budget allocated for forestry sector State institutions	GEL/ ha /year	MoF/MEPA/FIMS/Portal
	8.3. State budget allocated for forest management bodies classified by: total budget, % of budget for road construction and maintenance, % of budget for employees)	GEL/ha /year %	
	8.3. Share of State budget allocated for the forest sector (8.2.1 + 8.2.2) in total state budget	%	
	8.4. Donor support of forest sector		
	8.5. Net revenue of public forest management bodies (e.g. NFA, Ajara Forest Agency, APA, Akhmeta municipality, etc.)	GEL/year	MEPA/FIMS/Portal
	8.6. Damage induced by illegal use of forest	GEL Qualitative	
9. The commercial collection of NWFP is promoted on a sustainable level	9.1. Quantity and market value of non-wood forest products	Per NWFP and year: – Amount of raw material in m ³ , tonnes, or another appropriate unit – GEL/unit	MEPA/FIMS/Portal
	9.2. Quantity of marketed non-wood forest products compared with identified sustainable amounts specified in the license contract	% of legally allowed amount	MoF/MEPA/Portal
10. Services provided by Georgian forests are enhanced without compromising the protective functions of the forest	10.1. Value of marketed services of forest	GEL/year	MEPA/Portal



Criterion	Indicator	Measurement units	Data sources
Social Principle			
11. Working conditions in the forest sector are “decent”	11.1. Employees in the forest sector on different levels (central, regional, district) classified by gender and position	N/% per age class N/% per sex N/% per occupational category	MEPA/Portal GEOSTAT Private companies
	11.2. Compliance of salary with average salary of similar positions in other sectors	%	
	11.3. Fatal and non-fatal occupational accidents and occupational diseases classified by type of work and seriousness of accidents	N total accidents % accidents/class % injuries/class	
12. Job applications from people living in the vicinity of the forest areas are prioritized in case of similar qualification	12.1. Employees of Forest Management Body on forest district level originating from villages in the vicinity of the forest	% from total number of employees on district level	
13. Staff employed in the forest sector has adequate qualification	13.1. Qualification of employees based on the requirements of specific positions	% of employees with required certificates	
	13.2. On-the-job-training for employees of forest management and supervisory bodies as well as private companies and license holders to gain the required certificates classified by subjects	N of trainings N of trained staff	
14. Forest education is improved	14.1. Students studying forestry or forest related topics at universities (bachelor, master, PhD) and at Vocational Education Training colleges	N of graduated students	Ministry of Education Universities VET colleges
	14.2. Education within State forest sector institutions	N of internships/ traineeships	MEPA/Portal Management bodies
	14.3. Access to forestry education for rural population	Qualitative	Ministry of Education
15. Income opportunities for rural population living in the vicinity of forest areas are created	15.1. NWFP utilisation licenses for rural population living in the vicinity of forests classified by individual Non-Wood Forest Products	N of license holders Location and size of license areas Quantity of NWFPs per license	MEPA/Portal Management bodies
	15.2. Wood supply for legal sawmills and carpentries in the vicinity of forest areas	m3 % of total harvested wood	MEPA/Portal



Criterion	Indicator	Measurement units	Data sources
	classified by tree species and wood qualities		
	15.3. Income opportunities in the tourism sector for rural population living in the vicinity of forest areas (low, medium, high)	Qualitative	MEPA/Portal Municipalities Ministry of Economy
16. Everybody's access to forests is ensured as long as forest ecosystems are not damaged.	16.1. Facilities e.g. picnic areas, camp sides, hiking trails, etc.	N	MEPA/Portal
	16.2. Damage induced by recreational use (e.g. garbage around picnic areas, fire, soil erosion) (non, little, medium, high)	Qualitative	
	16.3. Damage induced by unsustainable non-commercial NWFP use (low, medium, high)		
17. The rural population living in the vicinity of forests has access to grazing areas close to their settlements as long as forest ecosystems are not damaged	17.1. Forest areas used for grazing classified by legal and illegal use	Ha	
	17.2. Average distance between 'grazing areas for common use' and 'settlements' classified by legal and illegal use	m or km	
18. Stakeholders have a right to participate in planning and decision-making pertaining forest management	18.1. Meetings with stakeholders	Number	MEPA/Portal Municipalities
	18.2. feedbacks by stakeholders		
	18.3. Feedback from stakeholders considered in final management plan	Qualitative	
	18.4. Consultation council in municipalities		
	18.5. Availability of draft important decisions of public interest for comments from stakeholders		
19. Publicity to the relevant forest sector related information is ensured	19.1. Effective system of issuing public information about SFM in Georgia	Qualitative	MEPA/Portal
	19.2. All the decisions made are published through sources, which are accessible for all interested stakeholders		
20. Mechanism to secure stakeholder participation in the development and	20. Status of the National Forest Program (NFP) process		



Criterion	Indicator	Measurement units	Data sources
implementation of forest related policies, strategies and legal regulations is enhanced			
21. National policies, strategies, legislation, regulations and institutions are strengthened to encourage SFM	21.1. National policy (Forest Concept) supporting SFM is approved by Parliament of Georgia	Qualitative	MEPA
	21.2. National principles, criteria and indicators of SFM considered in the legal and sub-legal acts		
	21.3. Institutional framework of forest sector		
	21.4. Efficient traceability system for wood products		
22. Separation of policy, management and supervision functions is ensured	22.1. Functions of policy, management and supervision institutions		
23. National and subnational forest assessment processes are in place	23.1. Legally approved scientifically sound national forest monitoring and reporting process (Georgian National Forest Inventory)		
	23.2. Legally approved methodology for forest management-based inventory/taxation for the elaboration of 10-year management plans for individual forest districts		



KAZAKHSTAN

Approved by the
by order of the chairman of the Committee for Forestry and Wildlife of the
Minister of Agriculture
Republic of Kazakhstan
on _____ 2019
№ _____

**National Criteria and Indicators for SFM on the territory of the Republic of
Kazakhstan**

№ n/n	Criterion	Indicators	Measurement Unit	Information source
1.	1.	2.	3.	5.
1.	CONSERVATION OF BIODIVERSITY	1. Forest area by region and types (mountain forests, desert forests, floodplain forests, tugai forests, spun forests, Kazakh low-mountain forest, belt forests, island forests) and their percentage of the total area of the State Forest Fund	ha / %	Official statistical data
		2. Protected forest areas and their percentage in the total area of specially protected natural territories	ra / %	Official statistical data
		3. Distribution of areas of the State Forest Fund by the main tree species.	ha	Official statistical data
2.	MAINTAINANCE OF THE PRODUCTIVE CAPACITY OF FOREST ECOSYSTEMS	4. The total stock of wood in the forests.	cubic m	Official statistical data
		5. Area of the private forest fund and timber stock of the private forest fund	ha	Official statistical data



№ п/п	Criterion	Indicators	Measurement Unit	Information source
	1.	2.	3.	5.
		6. The annual volume of harvested timber for all types of felling	cubic m	institutional reporting Ministry of Agriculture, RK
		7. Annual volume of harvesting non-timber forest resources (secondary usage)	ha	institutional reporting Ministry of Agriculture, RK
3.	PROTECTION OF FORESTS FROM FOREST FIRES, PESTS AND DISEASES	8. Area of forest affected by harmful insects, forest diseases, including the invasive species	ha	institutional reporting Ministry of Agriculture, RK
		9. Area of forest damaged by forest fires	ha	Official statistical data
4.	MAINTAINING AND EXPANDING LONG-TERM MULTIPLE SOCIO-ECONOMIC BENEFITS TO MEET THE NEEDS OF SOCIETY	10. Capital investment and annual expenses on forestry, production of timber and non-timber products produced or collected, forest ecosystem services, recreation and tourism.	thousand tenge	Official statistical data
		11. Annual investment and expenses from the state budget: 1) for forest research; 2) for education.	thousand tenge thousand tenge	Official statistical data
		12. Area and share of forests used for recreation and tourism.	ha	institutional reporting Ministry of Agriculture, RK
		13. The cost of one visit, the number of visits,	man	institutional reporting



№ п/п	Criterion	Indicators	Measurement Unit	Information source
1.		2.	3.	5.
		receipt of funds for the use of forests for tourism and recreational purposes.		Ministry of Agriculture, RK



KYRGYZSTAN

Updated C&I set for sustainable forest management KYRGYZSTAN

As of February 2019

Criterion 1

Maintenance of the forest ecosystems and forest resources conditions

- 1.1. The dynamics of change in the share of the forest covered area of all categories of land.
- 1.2. The proportion of perennial plantations from the total forest area.
- 1.3. The share of exploited forests from the total area of forests, forests designated for exploitation (recreation, tourism, forestry activities).
- 1.4. The areas of forest lands transferred to leasehold use, including those covered by forests and the number of forest users.
- 1.5. Dynamics of changes in the areas of forest pastures for every 5 years.
- 1.6. Areas of stable plantations to the total area of forests (for Leshozes based on forest inventory materials).
- 1.7. Distribution of forests by types and types of forest.
- 1.8. The area of forests affected by climatic and anthropogenic factors.
- 1.9. Poles of the areas of settlements from the total area of the state forest fund and SPNT.

Criterion 2

Conservation and maintenance of forest biodiversity

- 2.1 Dynamics of forest area change in specially protected natural areas, SFF and area designated for creation of SPNT.
- 2.2. The share of forests of particularly valuable wood and shrubby species from the total forest area.
- 2.3. The costs of scientific research in the conservation of biodiversity.
- 2.4. The area of forest territories intended to preserve or maintain the genetic diversity of forests (including nurseries, arboretums, plantations of particularly valuable species, seed banks, etc.).
- 2.5. The amount of funds allocated for biotechnical activities.
- 2.6. Total area of forests susceptible to diseases and pests (annually based on the results of the forest survey).

Criterion 3

Conservation and increase of forest productivity



- 3.1. Share of forests covered by forest management and forest management planning (annually).
- 3.2. Stocks of wood by species.
- 3.3. Average annual growth and volume of cut wood from all cuttings.
- 3.4. Volumes of use of non-timber forest products, including wild medicinal plants, fruit products, mushrooms, honey, technical raw materials and game (annually).
- 3.5. Annual volume of afforestation and reforestation.
- 3.6. The volume of industrial plantations of different directions.
- 3.7. The amount of pasture use.
- 3.8. Number of forest management plans.
- 3.9. Number of tickets issued for grazing
- 3.10. Number of forest reserves

Criterion 4

Increasing the socio-economic importance of forests

- 4.1. The share of forestry in the gross national product.
- 4.2. The volume of investments directed to the forest industry.
- 4.3. The number of people permanently residing on the territory of the forest fund.
- 4.4. Number of workplaces open at forestry enterprises
- 4.5. The population that receives income from the forest.
- 4.6. The amount of budgetary allocations directed to the forest industry.
- 4.7. Development of alternative sources of income for the local population.
- 4.8. The area of certified forests according to international standards.
- 4.9. Number of rental agreements
- 4.10. Number of rental agreements for recreational purposes
- 4.11. Number of contracts for the creation of plantations
- 4.12. Scope of technical support

Criterion 5

Political, legislative and institutional framework for sustainable forest management

- 5.1. National forest policy and legislative framework.
- 5.2. Improvement of the organizational structure of SAEPF and its subordinate organizations.
- 5.3. Financial and economic instruments in the field of sustainable forest management.
 - 5.3.1. Payments for ecosystem services
- 5.4. Collaboration with Scientific Institutions for Sustainable Forest Management
- 5.5. Development of research and implementation of scientific developments and technologies.
 - 5.5.1. Data for the assessment of ecosystem services for forests (may be a criterion for biodiversity)
- 5.6. Development of human resources.
 - 5.6.1. Increased skills and knowledge
 - 5.6.2. Age structure of forestry workers



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- 5.7. Participation of stakeholders in the development and implementation of forest policy.
- 5.8. International cooperation in the field of forest relations.
- 5.9. Monitoring, evaluation and reporting on the management and development of the forest sector.
- 5.10. Dissemination of information on forestry

Criterion 6 - improvement of social status of forestry workers

- 6.1. Average salaries of forestry workers
- 6.2. Social benefits
- 6.3. Improvement of infrastructure



UZBEKISTAN

Full criteria and indicator set, as of January 2019 UZBEKISTAN

(7 criteria, 37 indicators and 47 sub indicators)

C. 1	Extent of forest resources and global carbon cycle
1.1	Policies, institutions and instruments to maintain and appropriately enhance forest resources and their contribution to the global carbon cycles
1.2	Area of the State Forest Fund
1.2.1	<i>Land classified as forest</i>
1.2.2	<i>Of which area of natural forests</i>
1.2.3	<i>Of which area of semi-natural forests</i>
1.2.4	<i>Land not classified as forest</i>
1.3	Area of forests and the area of other wooded land
1.3.1	<i>Forest area by age stages</i>
1.4	Forest area dedicated to specialized services (hunting, medical herbs)
1.5	Growing stock on forest and other wooded land
1.6	Carbon stock and carbon stock changes
C. 2	Forest ecosystem health and vitality
2.1	Policies, institutions and instruments to maintain forest ecosystem health and vitality
2.2	Forest roads
2.3	Forest damage
2.3.1	<i>Area of grazing</i>
2.3.2	<i>Area of fire damage</i>
2.3.3	<i>Illegal fellings</i>
2.3.4	<i>The number of pests</i>
2.3.5	<i>The number of forest diseases</i>
2.3.6	<i>Number of threatened forest areas</i>
2.4	Rehabilitated forest area
2.5	Degraded forest area
C. 3	Biological diversity in forest ecosystems
3.1	Policies, institutions and instruments to maintain, conserve and appropriately enhance the biological diversity in forest ecosystems



3.2	Diversity of tree species
3.2.1	<i>Number of forest dependent species at risk</i>
3.2.2	<i>Forest area and distribution of forest ecosystems</i>
3.2.3	<i>Number of forest dependent species with reduced ranges</i>
3.3	Area of plantations
3.4	Number of introduced species
3.5	Area of protected natural territories
3.5.1	<i>Forest area managed for genetic resources</i>
3.5.2	<i>Number of species of flora and fauna on the territory of the State Forest Fund</i>
3.5.3	<i>Number of permits issued for special use of flora and fauna</i>
C. 4	Productive functions of forests
4.1	Policies, institutions and instruments to maintain and encourage the productive functions of forests
4.2	Rate of conversion of forests to non-forestry land uses
4.3	Production of non-wood forest products
4.3.1	<i>Production of medical herbs</i>
4.3.2	<i>Fishery</i>
4.3.3	<i>Beekeeping</i>
4.3.4	<i>Agriculture</i>
4.3.5	<i>Contribution of forests to food security</i>
4.4	Wood production
4.4.1	<i>Annual balance between growth and removals of wood</i>
4.5	Seed resources
C. 5	Forest management plan
5.1	Policies, institutions and instruments to improve the management of forests
5.2	Percentage of forests/other wooded lands managed according to management plans
5.2.1	<i>Forests under integrated management plans</i>
5.2.2	<i>Forests under functional management plans</i>
5.2.3	<i>Forests under other plans</i>
5.2.4	<i>The area managed for multiple forest functions</i>
5.2.5	<i>The area managed for pasture</i>
5.2.6	<i>Proportion of forest area under a long-term forest management plan</i>



5.2.7	<i>Areas and percentage of forest lands managed for environmental protection</i>
5.2.8	<i>The area of silvicultural treatments</i>
5.3	Forest fire security roads and strips
5.4	Number of allowed livestock in the State Forest Fund's pasture lands
C. 6	Protective functions of forests
6.1	Policies, institutions and instruments to maintain and appropriately enhance the protective functions in forest management
6.2	Soil conditions
6.3	Combating desertification and land degradation
6.4	Area of newly created protective forest
6.4.1	<i>Area of newly created protective forest within the area of the State Forest Fund</i>
6.4.2	<i>Area of newly created protective forest in the territory of agricultural enterprises</i>
6.4.3	<i>Area of newly created protective forest in the territories of other land users</i>
C. 7	Socio-economic functions and conditions
7.1	Policies, institutions and instruments to maintain other socio-economic functions and conditions
7.2	Forest sector workforce
7.2.1	<i>Number of persons employed and workforce in the forest sector</i>
7.2.2	<i>Employment by gender and age group, education and job characteristics</i>
7.2.3	<i>The number of workers employed in enterprises related to forestry</i>
7.2.4	<i>Employment generated in NGOs</i>
7.2.5	<i>Employment generated by international funds</i>
7.3	Economic contribution of the forest sector
7.3.1	<i>Value of wood products</i>
7.3.2	<i>Value of non-wood products</i>
7.3.3	<i>Revenue from forests</i>
7.3.4	<i>Revenue from export of forest products and services</i>
7.4	Share of wood energy in total primary energy supply
7.5	Investments in forests and forestry
7.5.1	<i>Total public investments in forests and forestry</i>



7.5.2	<i>Assistance in the organization of export-import activities, securing of grants and investments from international and other financial institutions</i>
7.5.3	<i>Total value of domestic grants</i>
7.5.4	<i>Funds from international sources</i>
7.6	The number of registered enterprises related to forestry
7.7	The number of small workshops and commercial organizations involved in the processing of additional forest products
7.8	The number of applications of individuals and legal entities for cooperation on co-management forest land