Forest management, monitoring and reporting system (TajFIS) in Tajikistan

Review of the current working processes of the Forestry Reporting System and proposals for enhancement

Final version

UNIQUE forestry and land use

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Client
GIZ Tajikistan

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Cover photo: Panjakent SFE

Date: 29.12.2017

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1 ASSIGNMENT OBJECTIVES

The current forest monitoring system (forms and models for data collection, reporting and processing of statistical analysis) dates back to the former Soviet Union time. These outdated forms no longer meet the requirements of a modern management of forest and hunting resources. Consequently, new reporting forms for statistical reports are needed that comply with a modern monitoring and reporting system. At the same time, working processes remain sometimes unclear, complex and not in-line with the reporting system. Forest sector will face serious challenges in delivering realistic assessment on its contribution to fulfill international agreements specifically the Nationally Determined Contributions, 2015. While the Enhanced Transparency Framework of Paris Agreement is being developed, countries are expected to advance their national monitoring systems.

The objective of the consultancy by UNIQUE is to provide strategic advice on forest monitoring in Tajikistan. In particular, in this report we focus on analysis of current working process which guide the ongoing reporting system. The outcome of this mission will serve as inputs for the conceptual and technical design of Forest Information System (TajFIS). In particular, the analysis of the current forestry reporting system and the proposed reporting system for JFM (Joint Forestry Management) will be integrated in the design of TajFIS.

A team of international and national consultants have conducted in-country mission from 27.11 to 01.12.2017, including visiting Panjakent Leskhoz in order to discuss the feasibility of the current and proposed reporting system/working processes. The team was additionally accompanied and supported by GIZ representatives during the SFE visit and workshop with the experts at SFE.

Specific outputs of the assignment are:

- Analysis of the current Forestry Reporting System i.e. working processes and proposals for improved working processes (from SFE level to SFA)
- Matrix of stakeholders involved in the reporting and analysis of respective internal and external (Agency on Statistics) forms/templates
- Recommendations and next steps.

2 METHODOLOGY

The methodology for the current assignment consisted of desk study, in-country mission and the elaboration of recommendations in the form of a final report (the current document). Figure 1 highlights the main steps and tools of the methodology.

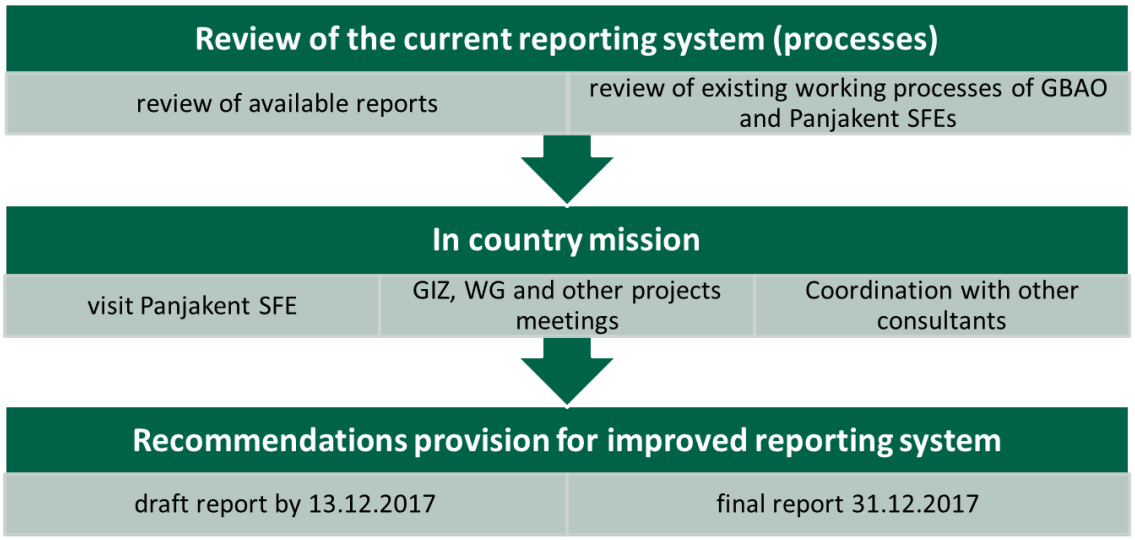


Figure 1: Methodological steps of the assignment

The review stage has focused on the revision of main reporting forms of SFA internal and external report such as to the Agency on Statistics (see 3.2.2). Furthermore, we revised the following 12 working processes (see Table 1) which were developed for GBAO and Panjakent SFEs.

Table 1: Working processes

	Process
1	Biotechnical activities
2	Violation of forest legislation (Illegal logging)
3	Forest protection
4	Entering into a forest use agreement A
5	Entering into a forest use agreement B
6	Afforestation and forest rehabilitation
7	Harvesting of forest products (firewood and timber)
8	Provision of license for hunting
9	Regulatory framework governing the sanitary felling process
10	Regulatory framework governing the process of harvesting of medicinal and food plants
11	Selling forest products
12	Joint forest management

During the in-country mission a workshop with Panjakent SFE was conducted, where current working processes and their potential simplification was discussed. Preliminary results were later presented at the SFA.

3 RESULTS

3.1 Main findings from the analysis

The objective of this assignment is to provide strategic advice on forest monitoring in Tajikistan. The outcomes will serve as inputs for the conceptual and technical design of a modern management, monitoring and reporting system (TajFIS). In particular we have analyzed:

- the current Forestry Reporting System i.e. working processes
- the respective forms (of Agency on Statistics) and reporting templates
- the potential of integrating JFM into reporting system.

Based on the analysis, we draw recommendations and next steps on improved processes and reporting system as well as on proposed institutional setting and the TajFIS database setting.

3.1.1 Processes

Definition

Business Process Model and Notation (BPMN) is a standard developed by Object Management Group (OMG) Inc. for business process modeling which provides an understandable graphical notation for specifying business processes based on a flowcharting technique. The primary goal of BPMN is to provide a notation that is readily understandable by all business users, from the business analysts that create the initial drafts of the processes, to the technical developers responsible for implementing the technology that will perform those processes, and finally, to the business people who will manage and monitor those processes.

BPMN provides businesses with the capability of understanding their internal business procedures in a graphical notation and will give organizations the ability to communicate these procedures in a standard manner. Business Process Modeling is used to communicate a wide variety of information to a wide variety of audiences. The structural elements of BPMN allow the viewer to be able to differentiate between sections of a BPMN Diagram.

It should be emphasized that one of the drivers for the development of BPMN is to create a simple and understandable mechanism for creating and further improvement of business processes. This provides a small set of notation categories so that the reader of a BPMN diagram can easily recognize the basic types of elements and understand the diagram. Within the basic categories of elements, additional variation and information can be added to support the requirements for complexity without significantly changing the basic look and the composition of the diagram. The five basic categories of elements are:

1. Flow Objects
2. Connecting Objects
3. Swimlanes (pool and lane)
4. Artifacts.

Flow Objects are the main graphical elements to define the behavior of a process. There are three Flow Objects:

1. Events (start, intermediate, end)
2. Activities (task, sub-process)

3. Gateways (exclusive, inclusive, parallel, complex) - is used to control the divergence and convergence of Sequence Flows in a Process.

There are four ways of connecting the Flow Objects to each other or other information. There are four Connecting Objects:

1. Sequence Flows (connects flow objects in proper sequential order)
2. Message Flows (represents messages from one process participant to another)
3. Associations (shows relationships between artefacts and flow objects).

Single processes

- Graphical Design – modelling of processes were made using Bizagi Modeler version 3.1. (free version).
- Description – brief description of each of the process is given in the technological card of the relevant process.
- Technological Cards – also known as process map, describes each stage of the process indicating responsible role, its actions, inputs and outputs (documents received or produced during the actions performed in the task).

A visualization example of one process (all working processes will be attached as Annex 1 folder):

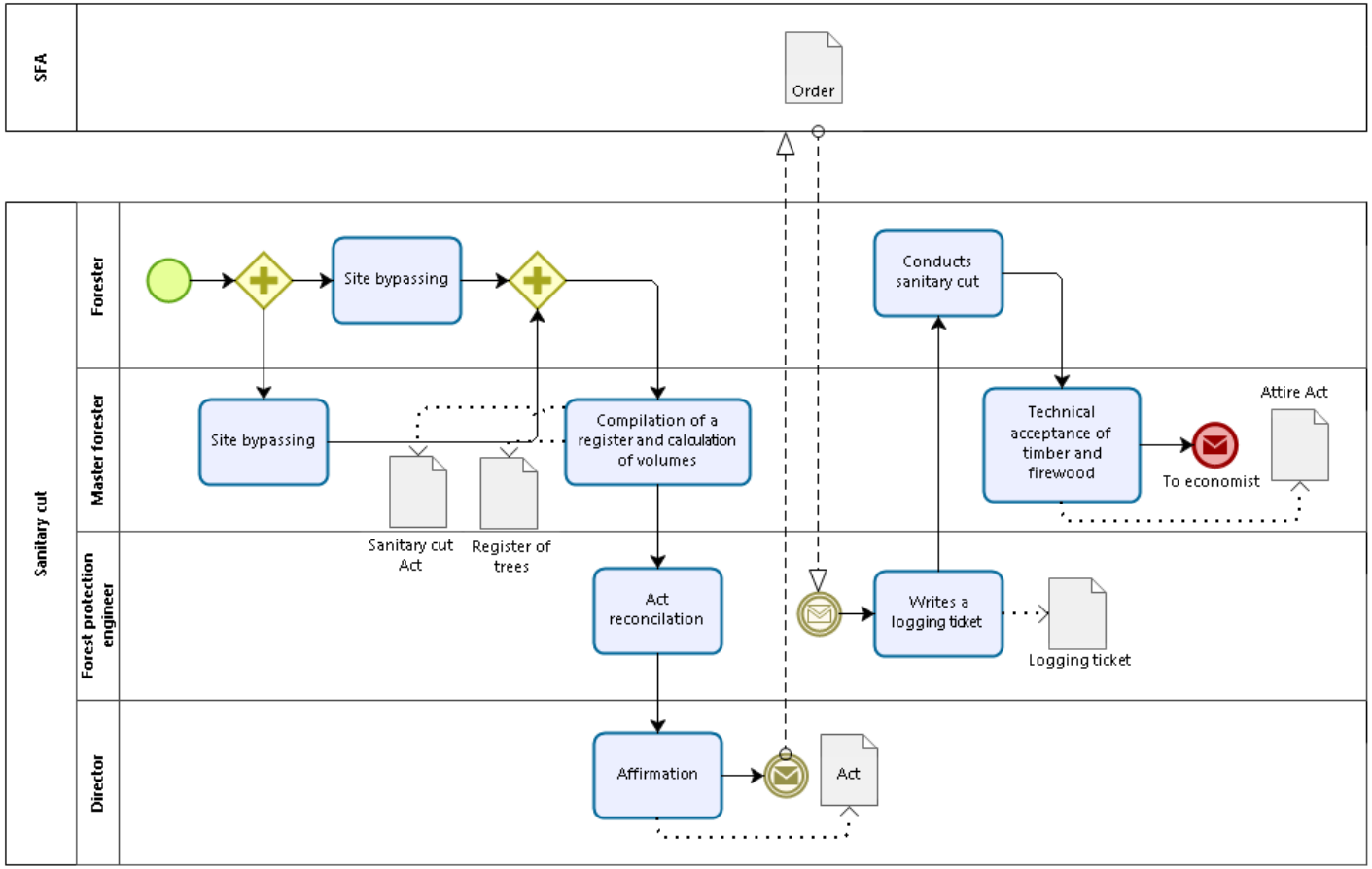


Figure 2: Example of one process: Sanitary cuts (quality to be improved)

Importance of the connection between processes and reporting system

The forest sector is in need of various types of information regarding forest land utilization and its limited resources. Information and indicators derived from reports and its concomitant monitoring systems for the forest sector play a key role to effectively develop policies and, subsequently planning and prioritizing interventions, valuation of forest resources and attracting needed investments. Relevant forest information collected on a systematic and periodical basis at each stage of different processes and reflected in the reports can enable effective implementation of policies, contribute to informed and evidence-based decision making processes. Current and accurate performance indicators and appropriate reporting system on forests and its resources can help raise the profile of the sector and increase awareness of forest resources' potential as well. On the contrary, inadequate information and reporting on forests may result in poor forest policies, planning, and management. Therefore, reporting accurate and current indicators at each stage of processes undertaken and implemented by SFEs is an importance factor for effective decision-making process in forestry sector resulting in sustainable forest management.

Analysis

All current working processes were analyzed by the team previously to the filed mission. These we discussed during the visit of Panjakent SFE with respective staff members (foresters and master foresters, main forester, forest engineers and accountant and economist). Graphical design of working processes and analysis of documents drawn-up at the input (event trigger) and output level (event end).

However, there are some roles that are mainly engaged in functional activities (documents signing, setting one's seal). Furthermore, establishment of commissions consisting an average of 5 (five) business roles involved in minor task, indicates that employees on lower level escalate issues to the upper level.

Although the Joint Forest Management (JFM) approach is widespread in the SFE Panjakent and JFM process itself has strong documentary background for forest management (questionnaire, map of the plot allocated to the forest user, medium term management and short-term annual plan), the monitoring over agreement and management plan implementation still needs improvement (refer to process model, technological card (process map) and working documents).

3.1.2 Status of the reporting system

Definition

A report is a document containing information presented in a narrative, graphic, or tabular form, prepared on ad-hoc, periodic, recurring, regular, or as required basis.

The current reporting system in the forestry sector of Tajikistan, including forms and templates for data collection is paper-based and partially redundant. Data for reports are collected and recorded in various internal working documents ("data source documents") compiled by the relevant staff of SFE. These forms do not meet the requirements of a modern management of forest and hunting resources. In addition, in view of newly adopted Joint Forest Management (JFM) mechanism that provides for local community participation in afforestation/reforestation, forest rehabilitation and protection activities, data reporting in this regard is crucial, but poorly organized. Therefore, current reporting forms need to be revised to integrate all key indicators for forest monitoring, including activities undertaken under the JFM mechanism, to be in line with modern monitoring and reporting system that provides current and accurate information required for sustainable forest management. As acknowledged by the UN Forum on Forests and used as a reporting framework for FAO's Global Forest Resource Assessment (FRA) Programme, sustainable forest management consists of the following seven thematic elements:

a. Extent of forest resources
b. Forest biological diversity
c. Forest health and vitality
d. Productive functions of forest resources
e. Protective functions of forest resources
f. Socio-economic functions of forests
g. Legal, policy and institutional framework.

Based on the above, national forest monitoring involves recording data, producing information and reporting mainly on the first six elements. Generally speaking, modern reporting and monitoring framework divides indicators into environmental, economic and social dimensions.

One of the key objective of the assignment as per the Terms of Reference is to review current reporting system of the Tajik forestry sector. In performing this task, UNIQUE consultants visited Panjakent State Forest Enterprise (SFE). Over the course of almost two working days spent with key Panjakent SFE staff, UNIQUE consultants discussed, in addition to processes, the reporting system in place as well as various internal working documents used to feed official statistical forms with needed data. This step was preceded by a process identification and visualization conducted by GIZ.

Having analyzed the internal "working documents" and official statistical forms, it was decided to focus on the analysis of the reporting forms that flow from SFEs to SFA and Agency on Statistics. Other documentation called "working papers" or "data source documents" are not included here, but mentioned in the processes (technological cards)

Identified forms

As evidenced by representatives from forestry sector (Panjakent SFE and SFA staff) and State Statistical Agency, official statistical reporting forms are used to report and monitor all forestry sector activities and its key indicators. Data from the mentioned reporting forms are also used

to report forestry sector performance to the Government of Tajikistan on a regular basis (monthly, quarterly, semi-annually and annually).

12 new statistical forms have recently been developed by the Agency on Statistics in conjunction with SFA representatives and adopted for use in forestry sector. The analysis of the reporting system in the forestry sector focused on reviewing the mentioned new forms (see below table). The table below provides analysis of the reporting forms and includes names of the statistical reports, key indicators, reporting period, process covered and data source documents used to fill in statistical reporting form. Note that season and months of implementation differ for the processes and activities. Furthermore, forms are compiled by several persons of SFE. Details on responsible persons for each process is described in each process visualization.

Table 2: Analysis of current statistical form

Form	Form Name	Filled By	Transmitted to	Main Indicators	Period to Submit	Process Covered	Data Source Documents
№ 1	Afforestation and Forest Rehabilitation Report	SFE's concerned staff	Regional SFE	- seedlings planted (ha); - seeds planted (ha); - forest trees planted by type (ha); - weeding and tending (ha); - quantity of seeds prepared and procured by type (kg);	Quarterly	Afforestation and Forest Rehabilitation	- Work order statement; (наряд-акт); - Technical Acceptance Act ; (акт тенической приемки)
№ 2	Report on reforestation in areas with fulfilled measures aimed at natural forest regeneration	SFE's concerned staff	Regional SFE	- soil loosening - fencing - other measures	Annually	Afforestation and Forest Rehabilitation	- Work order statement; - Technical Acceptance Act
№ 2	Report on Hunting and related activities	SFE's concerned staff	Regional SFE	Funds spent on: - wild animal protection; - biotechnical works; - hunting area (ha); - staff engaged in hunting activities; - headcount of wild animals allocated for hunting	Annually	Biotechnical Works	- Annual Budget Form approved by MoF; - Form 1 submitted to Land Committee; - Data compiled by commission consisting of representatives from SFA, EPC, Forest Institute etc.
№ 3	Principal and Intermediate Felling Report	SFE's concerned staff	Regional SFE	- Selective sanitary felling (ha); - q-ty of wood (m^3)	Quarterly	Selective sanitary felling	- Felling Location Examination Act ; - work permission for felling (issued by SFA); - Work order statement
№ 4	Report on transfer of forest plantation to forest-covered area	SFE's concerned staff	Regional SFE	- planted forest plantations; - change in forest-covered area	Annually	Afforestation and Forest Rehabilitation	- Book on registration of seedlings and seeds planting; - Work order statement;

							- Technical Acceptance Act
№ 5	Report on Forest Law Violation	SFE's concerned staff	Regional SFE	- Number and types of violations; - estimated amount of damage	Quarterly	Forest Law Violation	- Protocols/Records of forestry violation;
№ 6	Forest Fire Report	SFE's concerned staff	Regional SFE	- number of fires occurred; - quantity of forest plantation/products/timber fired	Semi-annual	Forest Law Violation	- Forest Fire Acts
№ 7	Forest Plantation Condition Report	SFE's concerned staff	Regional SFE	- condition of forest plantation by type (ha & condition)	Annually	Afforestation and Forest Rehabilitation	- Act of Commission (prepared by SFE staff)
№ 8	Report on planting materials in SUE Nurseries and small SFE nurseries	SFE's concerned staff	Regional SFE	- Seedlings and seeds planted (ha & q-ty);	Annually		- Nursery inventory; - Seeds and Seedlings Inventory Book in nurseries
№ 9	Report on survival of forest plantations	SFE's concerned staff	Regional SFE	- Area and type planted (ha); - Survival rate (%) - reinforcement planting required (ha)	Annually	Afforestation and Forest Rehabilitation	- Inventory Form for forest plantations
№ 10	Report on Performance of Production Plans	SFE's concerned staff	Regional SFE	- All key activities done by SFEs - Financing data	Annually	Almost all processes	All internal production, finance & staff documents
№ 11	State Forest Fund Report	SFE's concerned staff	Regional SFE	- total forest fund area (ha); - forested area (ha)	Annually		- data from Form 4, Form 7 - Form 1 submitted to Land Committee
№ 12	Report on Forest Protection	SFE's concerned staff	Regional SFE	- Protection from pests - forest pest and disease area	Annually	Forest protection	- Work order statement; - Technical Acceptance Act

Results of the forms analysis on a general level

On a general level the main finding of the analysis shows that the same information is reported in several forms. Additionally must be mentioned that roles and responsibilities are not always clear to the reporting entity. In detail:

- Analysis of the statistical reports depicted that same information on certain indicators show up in several reports in the aggregated and itemized forms.
  - For instance, funds spent on "Biotechnical Activities" to create favorable conditions for a natural increase in the number of animals shows up in Section II. Silvicultural Activities of Form 10. The same information with more details on the financial resources spent and itemized operations performed are included in Section I. Activities for protection and increase of wild animals of Form 2.
  - Data on felling and failed forest plantations show up in the Form 11. The same data on felling and failed forest plantations can be extracted in more details from Form 3 and Forms 7 & 4 respectively.
- Some indicators included in the statistical reports are not used at all.
  - For instance, Form 10 includes such indicators as "Aviation forest protection". As such, forestry sector does not use aviation for the purpose of forest protection.
- No separate statistical reporting form (reported to Statistical Agency) to account for forest products (timber and non-timber forest products, medicinal plants etc.) exists although there are internal forms used by SFEs to account for costs, volume and sales of all forest products.
- Indicators related to JFM activities were not reported separately. Data on activities undertaken under JFM mechanism are included in overall forestry indicators which are reported in the respective statistical forms.
- New statistical reporting forms are not properly distributed / used in the Leskhozes. During visit to Panjakent SFE, it was found that its staff do not have these new statistical reporting forms.
- Not all of Leskhoz staff are trained to fill in the newly adopted statistical forms. Panjakent SFE staff as well as some SFA representatives mentioned the need to have training for completing newly adopted statistical forms.
- Roles of responsibilities among SFE are not always clear.
- Arithmetical errors easily could happen in the chain of data connection until the final statistics (during the transmission from form to form).

Analysis of selected reports

There are statistical reports that cover the key indicators and include most of the data and activities undertaken in the forestry sector. In addition, since JFM is an increasingly used mechanism to fulfill various important activities in the forestry sector, data on such activities needs to be reported properly. The key statistical forms which are important for the forest sector are the following:

- **Form 10. Report on Performance of Production Plans**
  - This statistical report is one the key form that mirrors almost the whole activities and indicators of the forestry sector as whole. It includes such sections as silvicultural activities (biotechnical works, construction of silvicultural roads, marking timber cutting areas), forest protection works (ground direct pest control – chemical, biological and mechanic), hydrotechnical works (land improvement, repair of drainage channels), afforestation and forest rehabilitation works, firefighting activities (setting fire lines, firefighting road construction etc.). This form incorporates financing data, including funds spent on above activities as well as financing salaries, office inventories and stationary, per diems and accommodation funds spent. Furthermore, it includes information on staff, felling data by type, and planting material produced in all specialized nurseries and small nurseries of the SFEs.
  - Data and indicators are reported in both monetary (Tajik Somoni) and physical terms (ha, cubic meter, km).
  - Relevant SFA's departments (forest department, hunting unit, economic and planning unit, accounting unit, personnel and legal unit) collect information reported by each SFEs, aggregate them to fill in the Form 10.
  - There are also sections and indicators which are never used due to not performing such activities. For instance, forest pathology research and aviation forest protection.
  - This form is prepared and reported annually to the State Statistical Agency.

Based on our analysis of Form 10 and other report forms mentioned below, we have elaborated an optimal Form 10 (Annex 2).

- **Form 1. Afforestation and forest rehabilitation report**
  - This form includes data and indicators on activities performed on afforestation and forest rehabilitation. It includes 4 sections: Afforestation (seeds and seedlings plantation by types), forest rehabilitation, forest plantation maintenance and forest seeds (produced and procured). Data and indicators are presented in physical form (hectares planted, reforested, rehabilitated, and quantity of seeds produced and procured). Data are collected by relevant SFA department from each SFE, aggregated and used to complete the form.
  - This form is prepared and reported to the State Statistical Agency on a quarterly basis.

- **Form 2. Report on Hunting and related activities**
  - This form consists of 5 sections: Activities related to create favorable conditions for increasing number of wild animals (expenses for organizing inspection activities, animal headcount activities, biotechnical works etc.), Expenses for hunting activities (funds assigned for hunting activities from state budget, total hunting area assigned, number of staff engaged in hunting activities), Headcount of wild animals (incl. birds) earmarked for hunting during reporting year (number of wild animals by type), Wild animal and

birds breeding (farms and special places for animal breeding by type) and Protection of hunting area (violation of forest law, fines collected, files opened).

- This form is reported to the State Statistical Agency on an annual basis.

- **Form 5. Report on Forest Law Violation.**
  - Report on forest law violation registers and records number of violations, files opened and submitted to state law enforcement bodies, damage caused by violations in physical terms (ha, cubic meter of timber collected) as well as information on forest damage caused chemical and industrial wastes and emissions.
  - This form is prepared and reported to the State Statistical Agency on a quarterly basis.

- **Form 11. State Forest Fund Report**
  - This form indicates the total area of state forest fund, including area forested and transferred to forest cover areas, and forest plantations area during reporting and previous years and changes thereof. It also accounts for non-forested area, including felling and failed plantations.
  - This form is prepared and reported to the State Statistical Agency on an annual basis.

JFM monitoring report

JFM is increasingly used by individual SFEs as a mechanism to fulfill various activities in the forestry sector that provides for local community participation in afforestation/reforestation, forest rehabilitation and protection activities. Data reporting in this regard is crucial for , but poorly organized in SFEs that employs JFM mechanism. Data on such activities needs to be reported properly. Data and indicators under JFM mechanism are included in the overall indicators of SFE activities without separation of JFM contribution separately.

Development of Monitoring Indicators

Developing a forest-related monitoring and reporting system and forming a common database system directly contribute to the improvement of sustainable forest management in Tajikistan. The associated objective in this regard would be to strengthen the Tajik forestry sector capacity in meeting the international information need (statistics, international reporting standards etc.), and to enhance the consistency among different forest-related international reporting. Current monitoring indicators being used in the Tajik forestry sector need to be re-visited and new indicators capable of providing both quantitative and qualitative data required for planning and decision-making process for the Government and sector officials is required. Furthermore, current indicators reported in the statistical forms need to be aligned with revised monitoring indicators. Having said that, UNIQUE is proposing monitoring indicators that gauge performance of the sector through three sets of performance indicators: ecological, economic and social.

The proposed monitoring / performance indicators need to be discussed further within Working Group and finalized (see below).

3.2 Recommendations

3.2.1 Processes can be improved

Job descriptions instead of individual contracts

Some of the processes of the Panjakent SFE are already bottom-up structured (e.g. NTFP harvesting, afforestation, Consideration of Forest law violation, Conclusion of Pasture usage contracts etc.). A significant recommendation for the improvement of current processes of the Panjakent SFE which strengthens this bottom-up approach will be revising internal job descriptions for each position containing description of his/her responsibilities. As a matter of fact, at mid-August 2014 SFA has developed and approved job descriptions for the key staff of SFEs, including the positions of the director, main forester, forester, assistant to forester, master of forest, and forest protection engineer. The job descriptions set the roles and responsibilities of the mentioned employees of each SFE.

SFA is currently practicing so called “contracts” with each SFE, and the latter, in turn, make downstream “contracts” with its staff to perform their duties in achieving targets and implementing plans set by SFA. In essence, those “contracts” are to prescribe responsibilities of each SFE and their staff to achieve operational indicators and has no legal force since it lacks key and common provisions of the legal contracts. Therefore, job descriptions need to be revised in view of the development of TajFIS (preferably by the Working Group). This will need time, intensive discussions with SFA staff and agreement on each role. If clear roles descriptions are agreed on, consequently, there will be no need to conclude additional contracts with SFEs for the performance of duties that they must fulfill, as they are already staff members, not contract workers.

Simplification of the processes is possible

Delegation of tasks to the lowest position within the entity is of great importance to make processes more efficient by using the advantages of delegation. This indicator allows to skip functional activities within the working process that actually does not increase the value of the process and its result and could be spared if not necessary for authorization procedures. Thus, it will decrease the number of roles involved in the working process, its steps, internal documents produced within the process. But, in order to be able to delegate the tasks to the low-level employees precise internal job descriptions must be developed based on the Order of the Forestry Agency under the Government of the Republic of Tajikistan as of August 11, 2014, number 91 “On approval of job descriptions of the State Forestry Officials in the Republic of Tajikistan”.

All process were simplified based on the following principles:

- Clear start of the process
- Clear end of the process
- Main involved documents/reporting forms
- Delegation of tasks to lower level within SFE.

3.2.2 Reports can be harmonized

Currently 12 forms exist – same data will be documented in different forms. Based on the analysis of the reporting forms, the following steps needs to be taken to improve the reporting formats and avoid overlapping works:

- Identify the full list of reporting indicators available in all statistical forms
- Assign responsible persons in each SFE for collecting, verifying and input of data.

Aligning of the reporting system with Forest Inspection (FI)

Forest Inspection should use monitoring data documented in the reports for their main task: measuring the performance by monitoring, provision of advice and improvement. The intensity of controlling by FI is yet to be defined. FI can conduct random control or systematic (see also 3.2.4 for the role FI in the TajFIS setting) depending on its human resources and its relevance either in a financial or natural context.

Integration of Joint Forest Management into reporting system

Given the importance attached to JFM mechanism, reporting under JFM activities, the following steps are recommended to be implemented (see also JFM working process in Annex 1)

- In addition to below key indicators, identify the list of indicators under JFM for reporting purposes to account for all activities performed during reporting period at different levels: SFEs and SFA:
  - Leased area, ha;
  - Soil preparation for afforestation (sowing and planting), ha;
  - Afforestation/forest rehabilitation activities (planting of various type of forest plantations by type and variety), pieces planted and ha;
  - Timber logging activities: amount of timber (by type), m^3 logged;
  - Maintenance cuts, m^3;
  - Forest protection activities: type of activity and indicator (e.g. fencing, m);
  - Fire lines built, km;
  - Forest products harvested by type and variety, kilo/ton.
- Maintain and keep updated and accurate information on the JFM activities using JFM monitoring table (see attached) separately by each SFE. This table is to be used for internal reporting purposes that must also be integrated into the TajFIS
- For official statistical reporting purposes, data from JFM Monitoring Table needs to be included in the SFE reporting system (Annex 3)
- Assign a dedicated staff responsible for collecting and compiling monitoring data incl. on JFM activities
- Train dedicated staff.

Aligning national reporting system with international requirements

Tajikistan has submitted its Nationally Determined Contributions (NDC), 2015 with very ambitious targets. The NDC states the role of forests as "of critical importance for the preservation of mountain ecosystems and biodiversity, improvement of the state of lands and prevention of their further degradation, protection of vulnerable infrastructure, protection of water resources and carbon ab sorption from the atmosphere. That is why they play a specific role both in terms of mitigating the impact of anthropogenic activity on the climate and reducing negative consequences." The sector will clearly need an improved monitoring system to contribute to NDS targets achievements.

During the NAMA (Nationally Appropriate Mitigation Action) feasibility study (commissioned by GIZ/KfW in 2015), an MRV concept was developed for Tajikistan (see Annex 4) presenting indicator scoring system for selected forest management criteria. Furthermore, FAO guidelines on National Forest Monitoring, 2017 provides an overview to setting and conducting national monitoring system.

Based on the developed MRV (Measurement, Reporting and Verification) concept of NAMA, we strongly recommend to conduct an analysis of comparing Tajikistan's current reporting indicators with international requirements in order to ensure the compatibility of the two systems.

3.2.3 Vision of TajFIS-data base and corresponding responsibilities

At the moment, almost no data on forest resources is gathered and stored in digital format. Some attempts to digitalize relevant SFA data have been initiated in the last few years, which consisted of transferring data from an analogue, paper format into MS Word format. Considering the fact that MS Word format does not allow any direct processing and analysis of data, and moreover that there is no central database system collecting all relevant data on forests and forest management in Tajikistan, there is an evident necessity for change.

The collection of all relevant data into one, standardized database will ensure proper data storage, processing and reporting. This data base forms the core part for storage and processing data (see **Error! Reference source not found.** for a simplified structure). The Tajik forest information system (TajFIS) is expected to provide access to all relevant users and stakeholders according to their fields of work and will ensure that duplication of efforts is avoided.

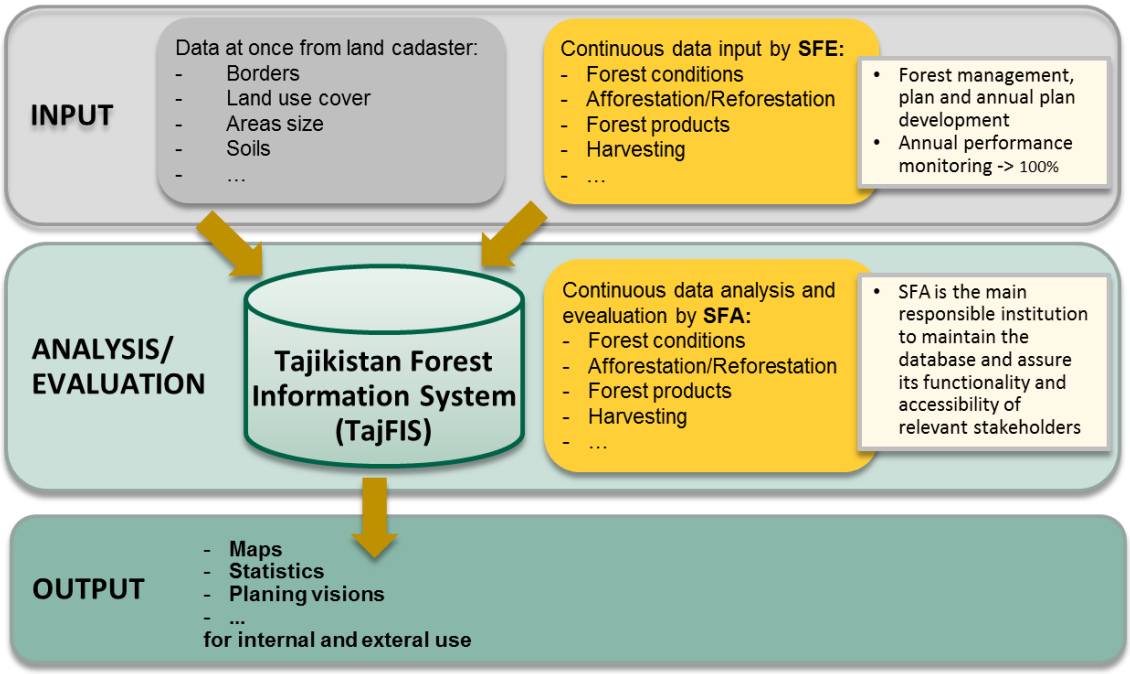


Figure 3: Role of a central forest database within a Forest Management Information System (source: UNIQUE)

This system should include geospatial information and enable collecting, recording and reporting information on forests and other land use types (e.g. pastures) within the state forest fund.

The establishment process of such a system should include the needs and possibilities of all future user groups to ensure a suitable design and functionality.

The entire process should be coordinated by SFA team, consisting of forestry, GIS and database management professionals and information communications technology professionals. However, clarity on the legal status of data (ownership, legal access, data sharing between ministries, cost of data access among others) must be analyzed.

The central database should be built based on the following principles (see also UNQIUE's report 2016 on "Forest management planning and monitoring system of Tajikistan"):

- **Keep it simple** – the database structure and templates for data collection/entering should be applicable to the local conditions and knowledge in order to be performed by the local foresters of the SFEs with a sufficient level of confidence.
- **Keep it relevant** – the data entered in the database should directly contribute to the evaluation of the defined objectives in the planning processes in order to improve future learning and planning (adaptive learning and planning cycles).
- **Focus on detecting change** – the database information should lead to the identification of impacts of forest management objectives and their translation into concrete management decisions in the field over time.
- **Use and discuss the results** – to ensure that results are shared and discussed among all stakeholders in order to initiate reflection and adaptive learning for future planning and management decisions.

Examples from international experience show that the process of the establishment of an FMIS is long and may take up to several years, depending on the initial level. To enhance the process from the beginning on, it is important to consider it within the forest management and planning design and implementation process. As stated before, for example, even the definition of attributes and elements to be included in the inventory templates are of high relevance for such system. This will ensure a smooth transition of this data within the FMIS at a later point in time.

3.2.4 Distributing responsibilities between the main stakeholders

We propose a simplified institutional setting which is required for the establishment of TajFIS (see Figure 4). The overall aim of the proposed institutional set up is to enable an interplay of the relevant institutions and to conduct monitoring in an independent and transparent manner.

In Tajikistan the roles of forest policy formulation, actual forest management and the control of the latter are distributed between three main agencies (see Figure 4):

- Forest policy formulation (State Forest Agency)
- Forest management implementation (State Forest Enterprises / Leskhozes)
- Control and supervision of forest management (Forest Inspection).

It is recommended to in-line the coordination of working processes between these three actors and clarify their roles within a reporting system. This embraces the definition of data security, data keeping, system configuration, reading and writing authorization etc.

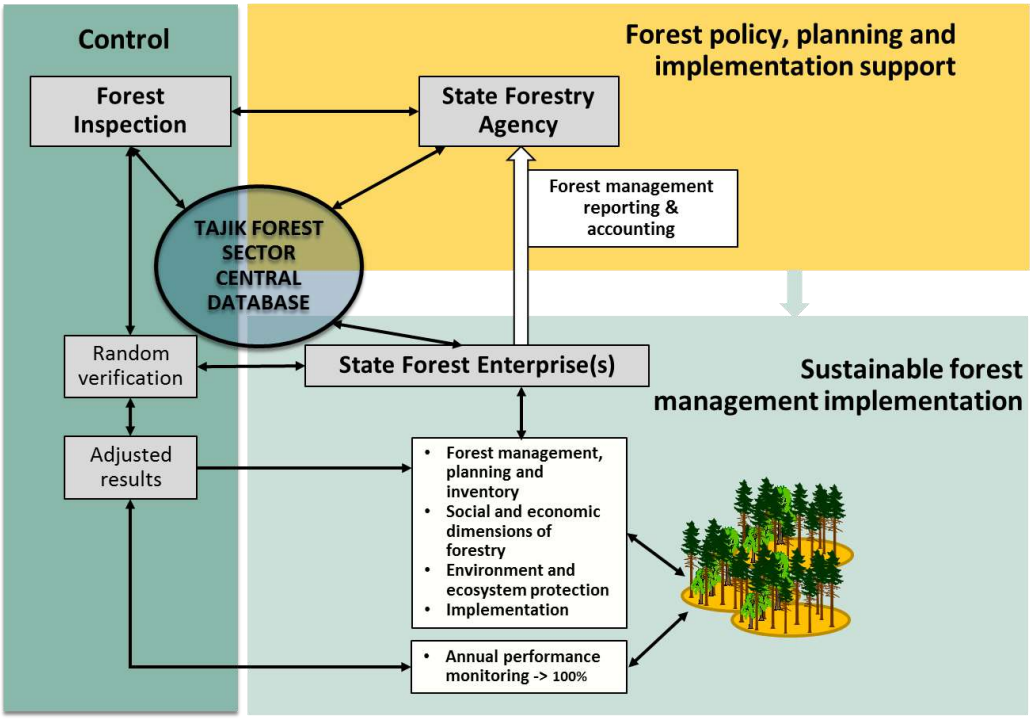


Figure 4: Proposed institutional setting of TajFIS (see report UNIQUE 2016; adjusted)

3.2.5 Recommendations are in accordance with laws and bylaws

Reporting und Processes must be in accordance to laws and bylaws. The first classification and definition of the processes, done by a consultant of GIZ (State Forest Enterprises GBAO and Panjakent), conducted a full analysis of the legal framework of the processes.

Proposed changes in the processes focus on simplification of work flows and clarification of roles. These changes are not expected to be significant in a way to conflict with existing laws or bylaws.

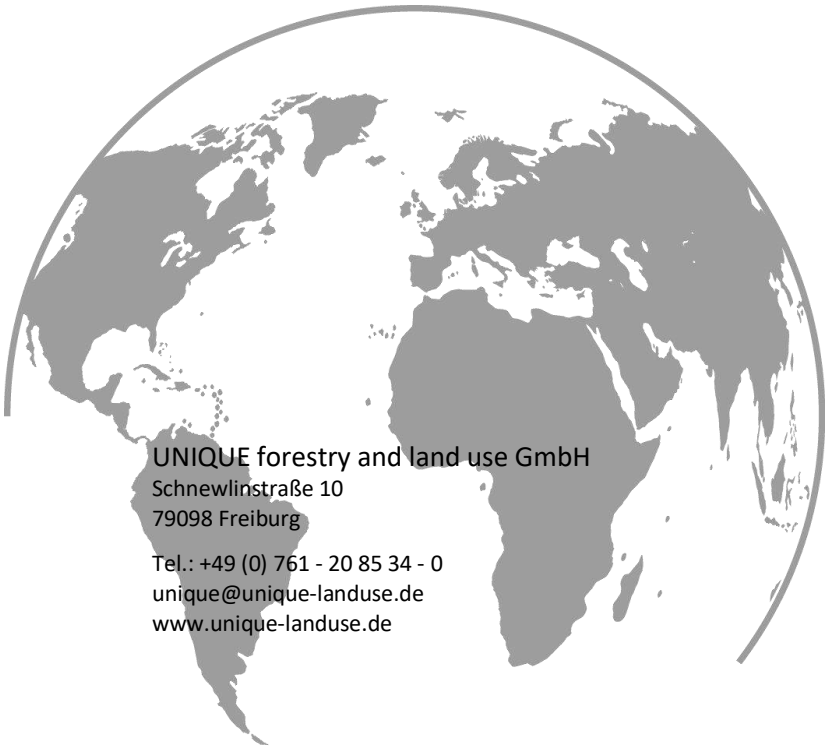
4 OUTLOOK

The following table gives an overview on the following next steps (to be yet completed in agreement with GIZ):

What	Who
Presenting all processes and agreement on the standard process to be followed by each SFE incl. JFM	GIZ/SFA
Harmonization of the 12 reporting form with the internal and external reporting system of SFA in order reduce double work.	SFA
If necessary, include modification and simplification in the 12 forms in order to collect necessary information	SFA/Statistics Committee
Coordination of all inputs of consultants; final presentation	Consultants, coordinated by GIZ
To conduct an in-depth analysis of comparing Tajikistan's current reporting indicators with international requirements in order to ensure the compatibility of the two systems (see Annex 4 as a basis for such analysis).	GIZ/SFA

5 ANNEX

- Annex 1: SFE processes in English and Russian languages
- Annex 2: Revised Form 10
- Annex 3: JFM monitoring table
- Annex 4: NAMA MRV concept



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