Kosovo Forest Information System
KFIS

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KFIS Context/background

FAO Project GCP/KOS/005/FIN, “Support on Implementation of Forest Policy and Strategy in Kosovo”, financed by the Government of Finland and implemented in the period from 2011 – 2017 under the Ministry of Agriculture, Forestry and Rural Development.

(With a specific outcome on)

Provision of the support to build up an information system that will serve as an IT tool to cover the KFA and other forestry institutions needs in carrying out their forest management mandates

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KFIS Context/background

Kosovo perceives forests as part of national treasure/heritage. The Law on Forest affirms this: “The forest of Kosovo is a national resource. It shall be managed in such a way as to provide a valuable yield and at the same time preserve biodiversity for the benefit of present and future generations”.

PSP statement: “To support efficient management planning, updated stand- and map data bases shall always be available”.

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KFIS Context/background

According to national forest inventory carried out in 2012, 45% percent of Kosovo territory is covered with forests.

The total forest area is estimated to be 481 000 hectares;

60% of the forestlands is owned by the state and the remaining 40% is owned by a large number (more than 120 000) of private smallholders.

Forestry is an important provider of wood as a fuel, which is one of the most important fuels in Kosovo's households; more than 80% of Kosovo's households use it for heating and cooking;

The estimates provide that the Kosovo forestry sector (including industries) accounts for about 1.0-1.7% of national GDP;

Wood industry comprises around 1,400 enterprises currently registered as wood processors, employing more than 3,000 workers;

The livelihood of between 8 to 10% of the population depends on forestry and the related wood industry.

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KFIS Context/background and process

Assessment studies, review of business processes, capacity building and verifying the status of forest information management 2011 – 2013

Preparation of design and ToRs for **“Design, development, installation, delivery and after-sales service of Kosovo Forest Information System (KFIS)” 2013**

Implementation of Phase I : From March 2014 to April 2015

Preparation of ToRs for **“Integration of GIS Module and other functionalities in Kosovo Forest Information System (KFIS-GIS)”, phase II, 2015**

Implementation of Phase II: 2016 - 2017

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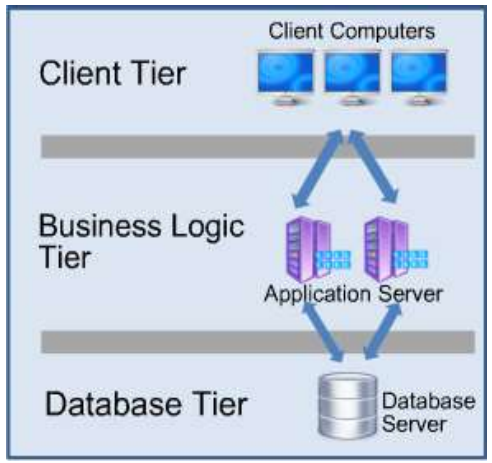
KFIS Concept

The KFIS has to be designed as a web application which will be supported by different databases that allows using ICTs state of the art technologies in forestry information management.

Access to system must be possible from any location in the world via internet, always ensuring appropriate security measures and user access level in place.

KFIS is a three tier information system consisting on:

1. Database Tier,
2. Business Logic tier and
3. Client Tier.



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KFIS Characteristics

KFIS is a web enterprise application, designed and implemented with server components written in Java and with Ajax user interface.

KFIS software components are all open source:

- Java language, for the server components
- Tomcat Servlet Container
- Bootstrap, for client components based on Ajax technology
- PostgreSQL database, with PostGIS extension
- JasperReports reporting engine, with visual editor Jaspersoft Studio
- Alfresco DMS, for document management
- GeoServer, GeoWebCache and OpenLayers, for GIS functionalities



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KFIS Characteristics

data management



document management



workflow



report & dashboard



GIS & real-time tracking



barcode & QR code



organization hierarchies & user Profiling



multilingual & mobile responsive



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KFIS Main Modules

KFIS is built in modules enlisted below:

a. Forest Management Module
b. Data Exchange Module
c. System Administration Module
d. Administrative Support and HR Module
e. KFA Departments Module
f. GIS Module
g. Monitoring, Evaluation and Reporting Module
h. Module for Access for External Users, Forest Owners and Public Access

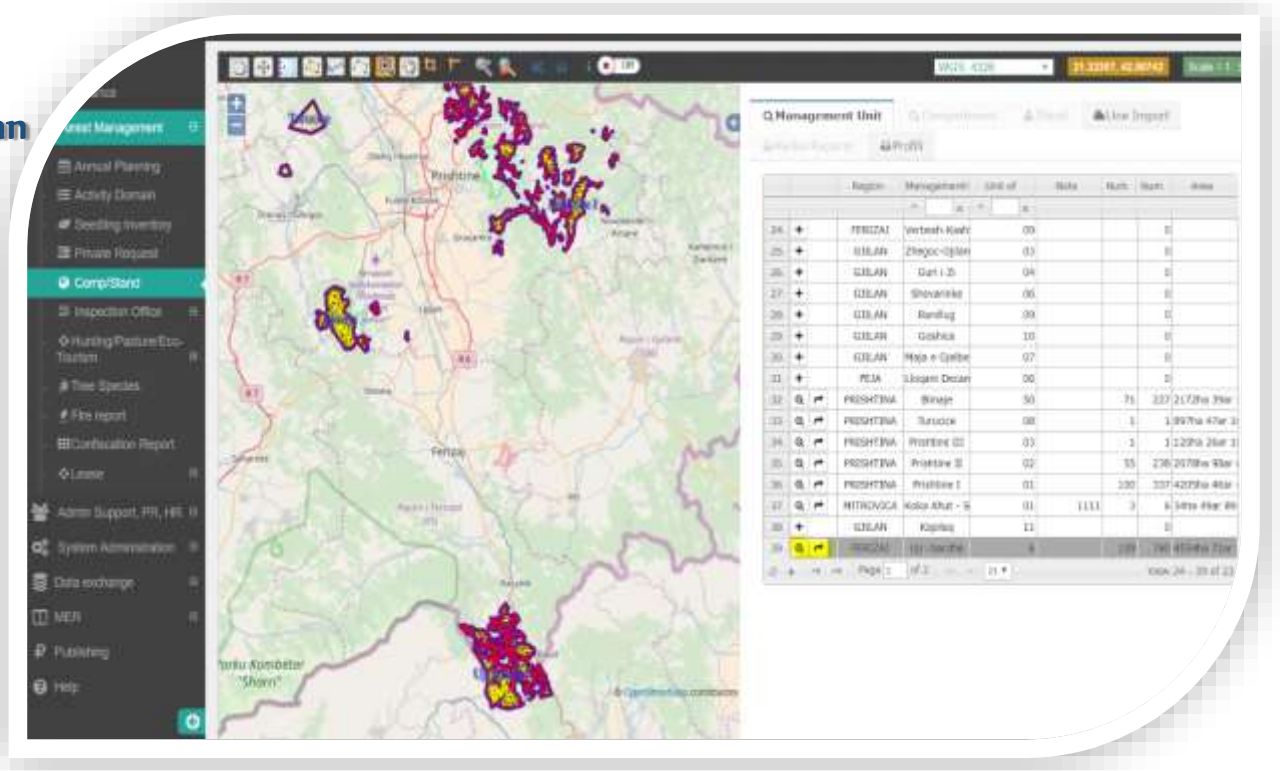
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KFIS Forest Management Module

- **Enable to create and 10 year forest management plans**
  - Management Units, Compartment, stands
- **Based on this long term plans create annual forest management plan**
  - workflow of review a plan *(central, regional and municipality level)*

REPORTING

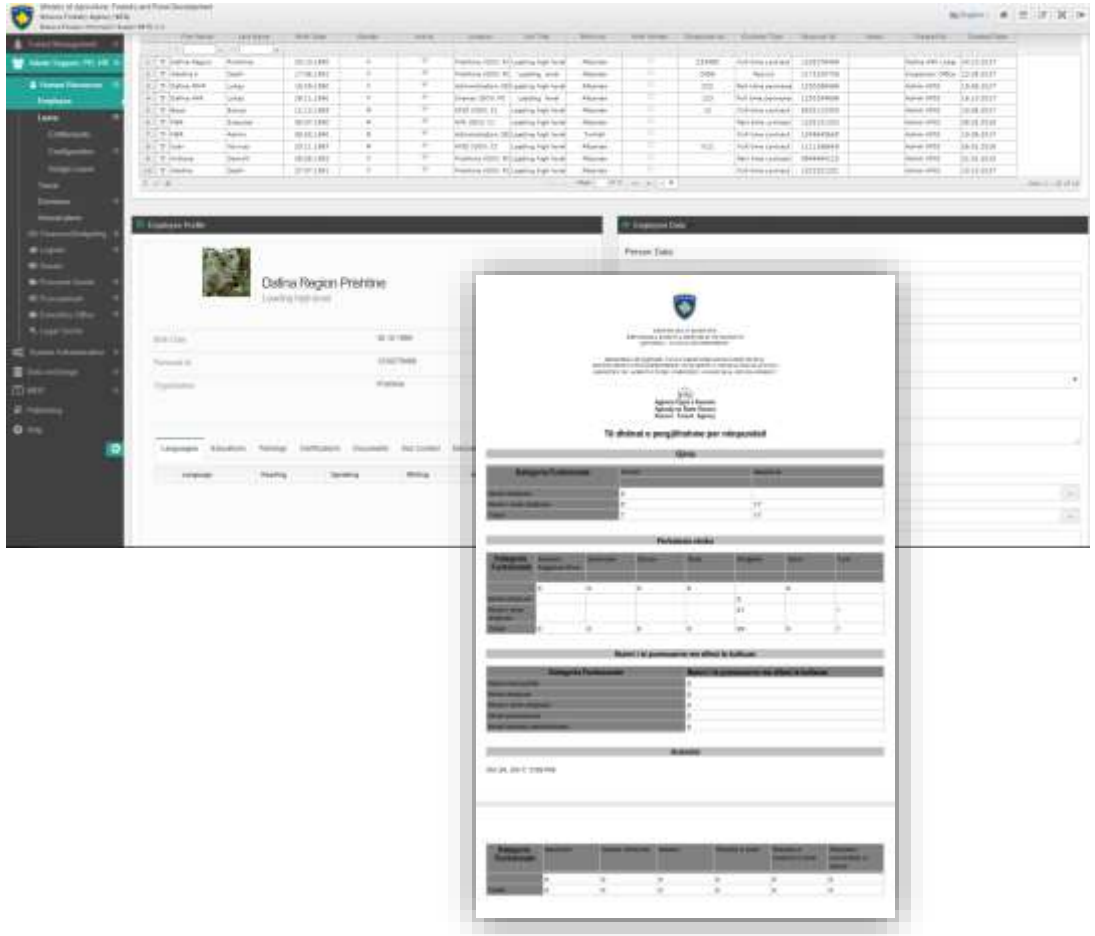
- **Forest Inspection**
- **Hunting/Pasture/Tourism**
- **Production of seedlings**
- **Forest Fire report**
- **Forest damage report, etc**



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KFIS Administrative support Module

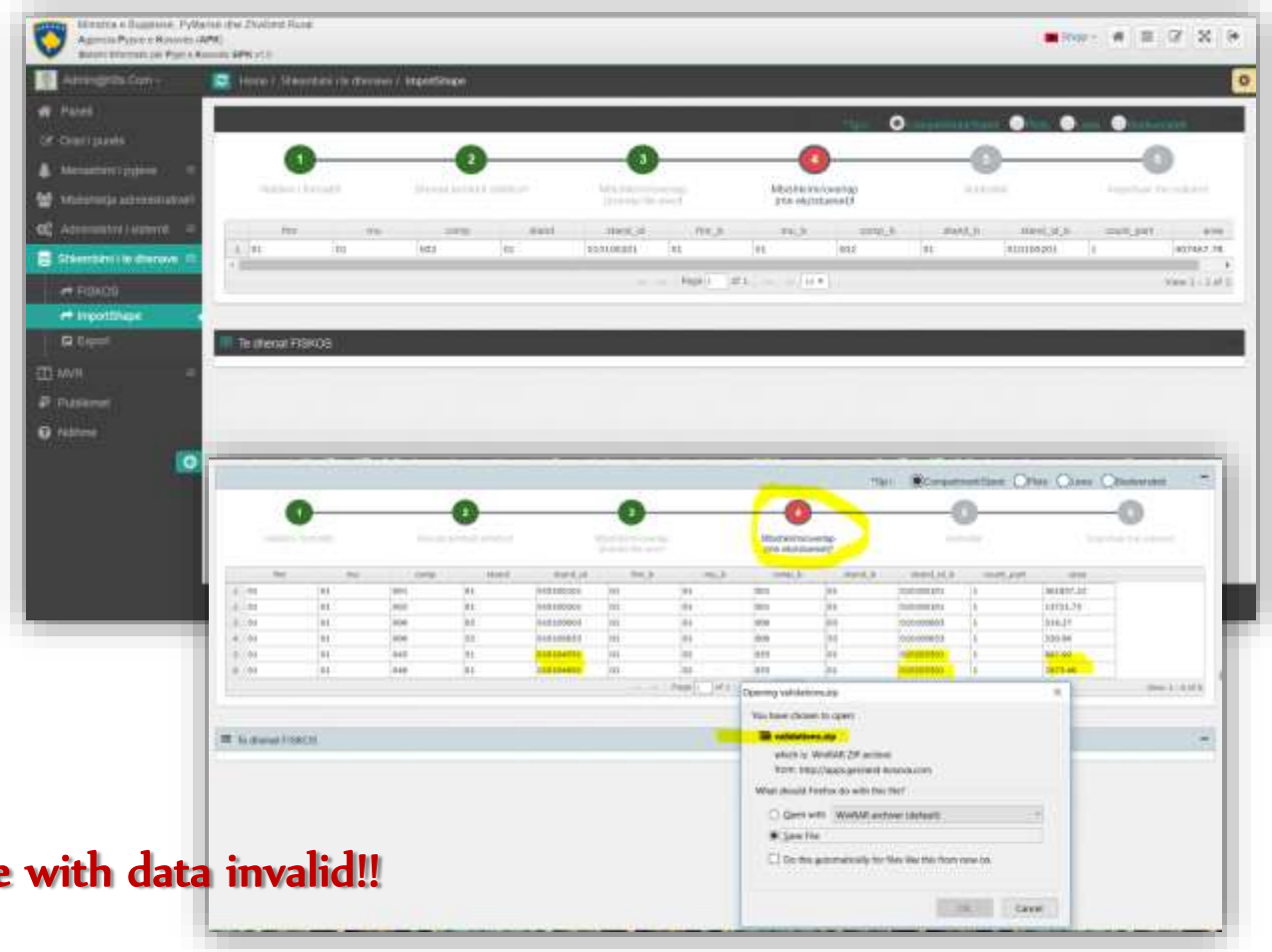
- **Human resource** *(employee, profile with resume, leave, travel, decision, annual plans, etc.)*
- **Logistics** (Vehicle, register, Service maintenance, staff assign, fuel consume, GPS Device, track-log, real-time tracking)
- ***Assets*** *(register, assign asset, report)*
- ***Procured goods*** *(Purchase Requisition, Purchase Order, workflow, etc.)*
- ***Procurement*** *(all workflow on forest operation need to bid)*
- ***Executive office***
- ***Legal sector,***
- ***Finance/Budget***



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KFIS Data exchange Module

- **Import of Shape File-management plan** *(stands, plots, forest line, road, biodiversity)*
- **Validation**
  - *1. Field/attributes!*
  - *2. Spatial validation Inside territory!*
  - *3. Overlap (inside file)!*
  - *4. Overlap (with existing)!*
  - *5. Value range controls*
- **Processing and Migration to Management Units**



- **When import failed, system export a shapefile with data invalid!!**

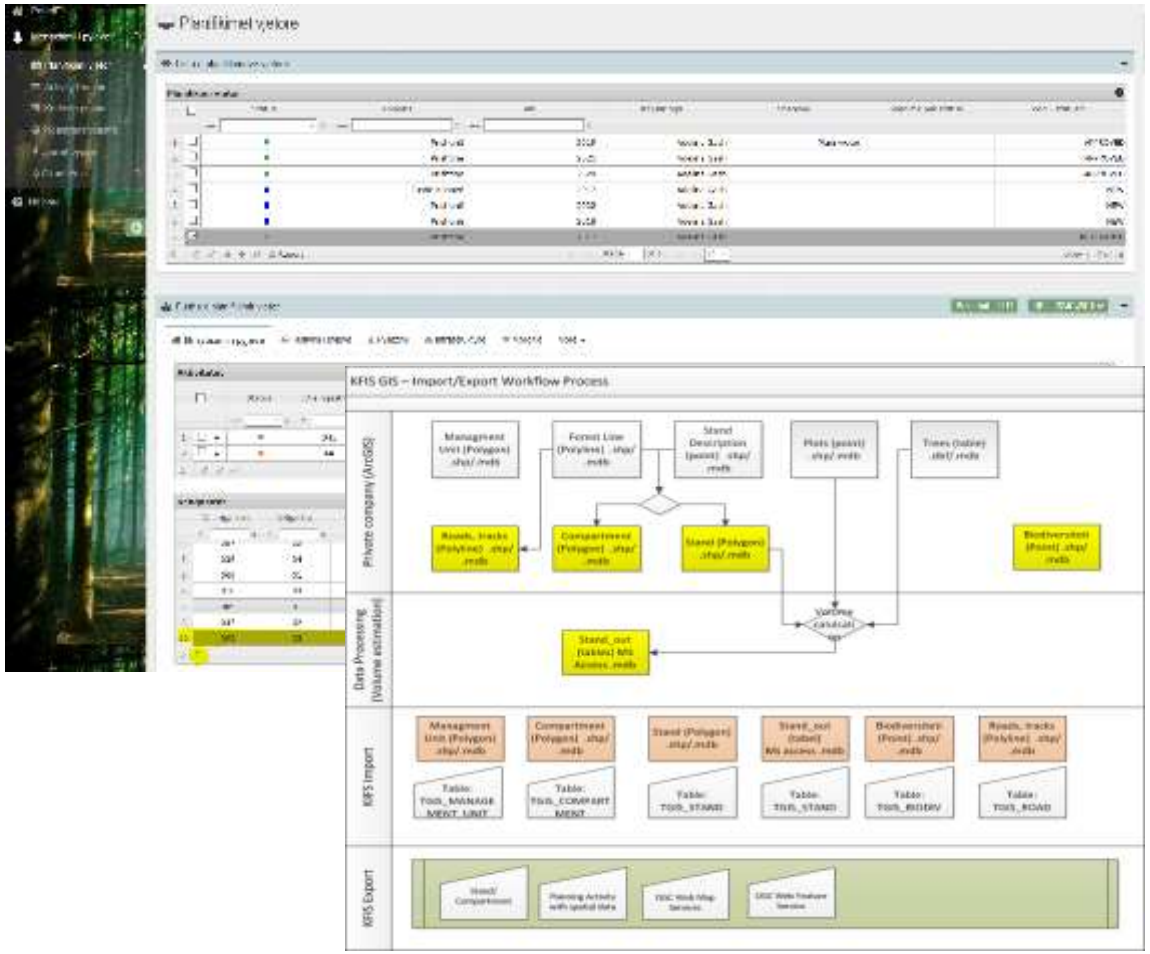
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KFIS GIS Module

GIS module is designed to support both, the management of forestry spatial data and cover all processes involved within system(s) and forest organization structure of Kosovo.

All KFIS modules are developed in order to be compatible with GIS component

GIS module is responsible for spatial data representation and processing, and additionally setting the link between the GIS module and other managed textual (business) data in the KFIS application.



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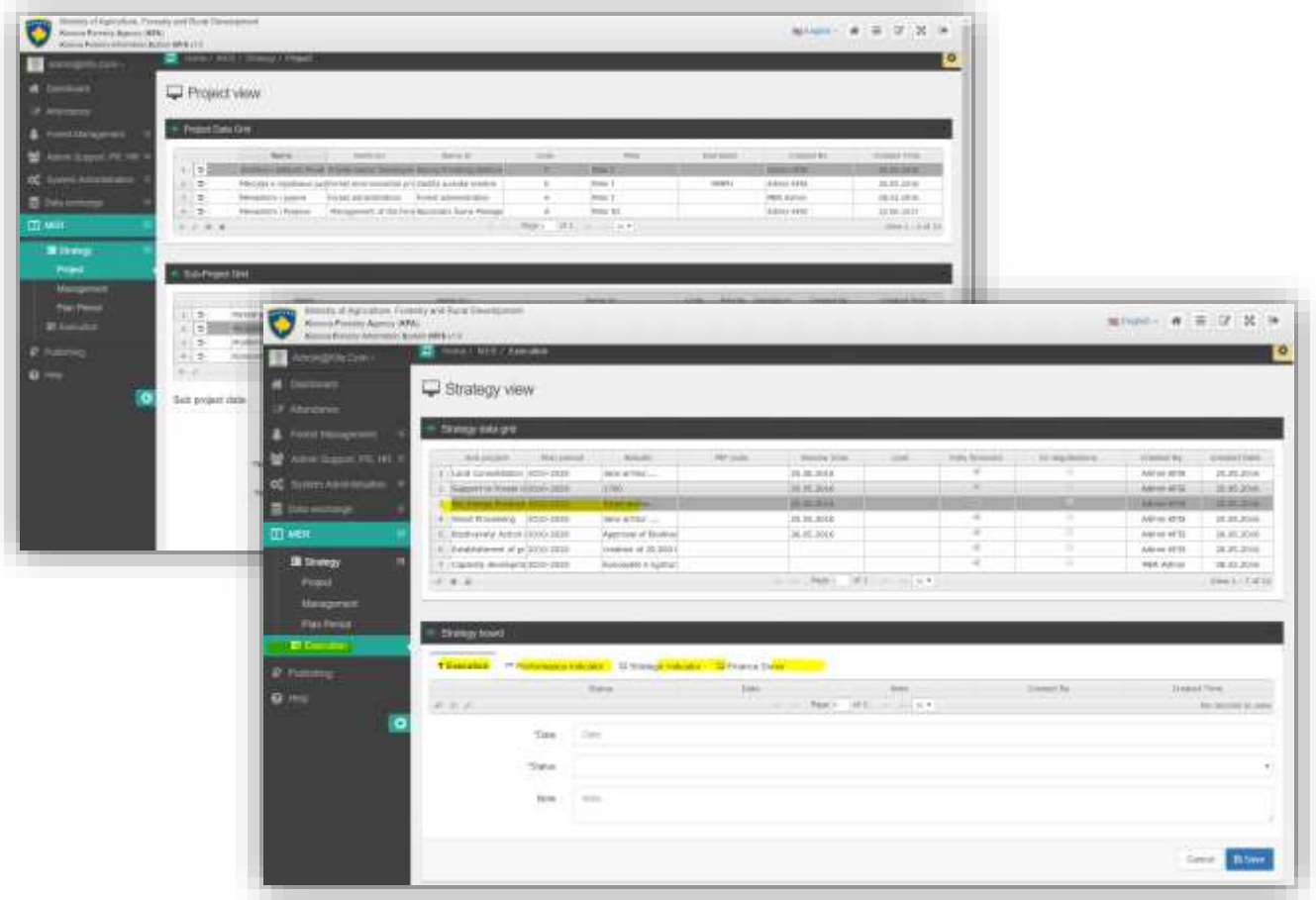
KFIS MER Module

The module enables monitoring and reporting of the indicators that are part of the monitoring and evaluation system as per the Forestry ME guidelines.

Each Agency shall record all works performed in forests and forest lands

MAFRD and the Forest Management Board monitor the overall implementation based on reports from KFIS MER Module provided by KFA on quarterly basis.

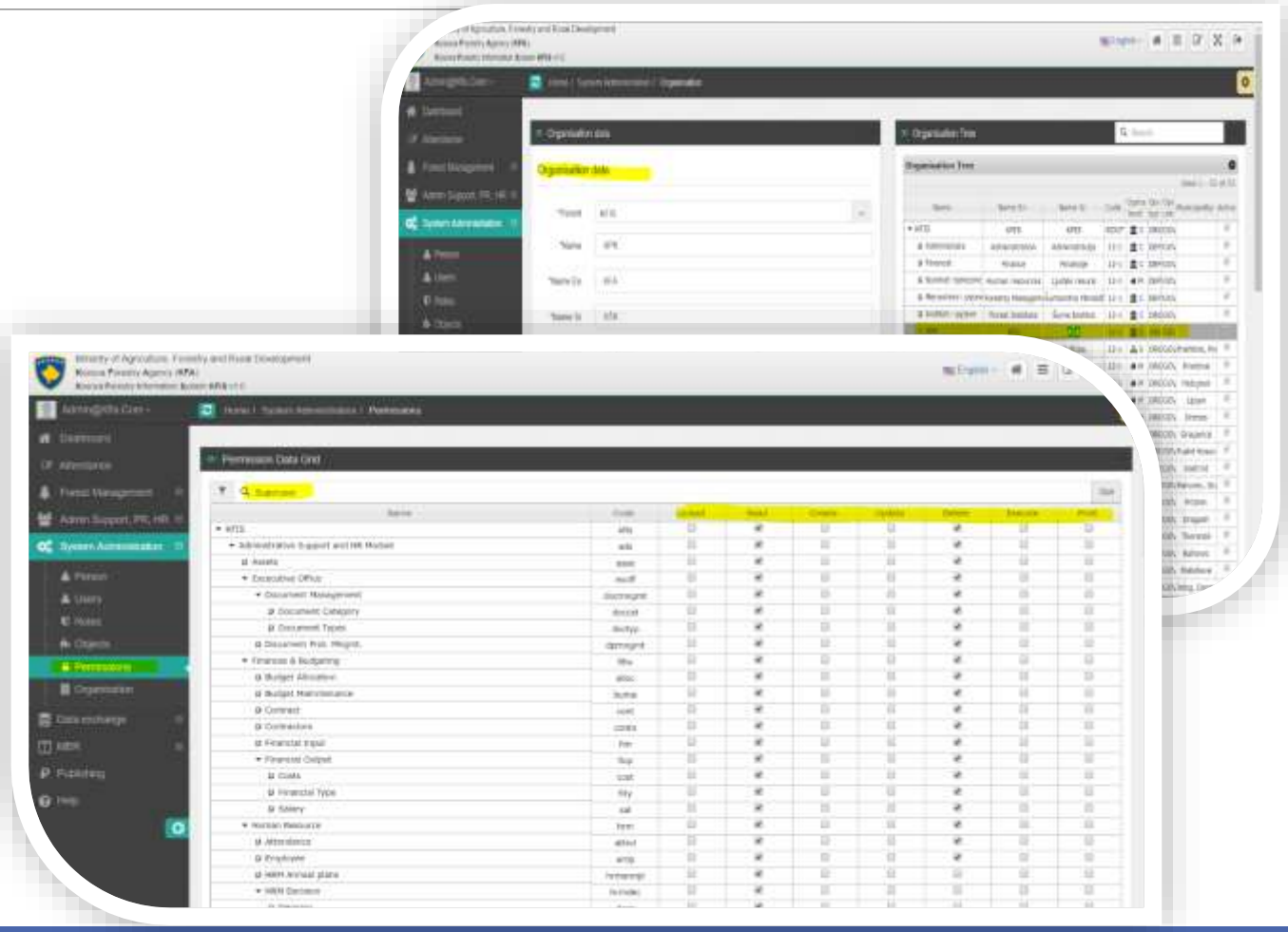
- *Execution of the works*
  - *Performance indicator*
  - *Strategic indicator*
  - *Finance and project costs, donor*
  - *etc.*



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KFIS System Administration Module

- Present organization and organizational hierarchy
- Define system objects
- Set the roles and permissions in system objects
- Create, Edit, Activate and Deactivate sectors within departments and or offices of KFA
- Create, Edit, Activate and Deactivate KFIS Users & Persons



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KFIS Modules and Integration with related Web portals Mobile Apps and QR Code

Web portal www.kosovoforests.org and mobile applications Kosovo Forest for iOS and Android are used for information dissemination and data gathering on forest related issues.

Both tools and prepared for integration and exchange of information's between these systems and KFIS.

The KFIS QR Code must be a part of all documents such as printing and reporting.

All report templates of KFIS must be extended on the document content with QR Code.



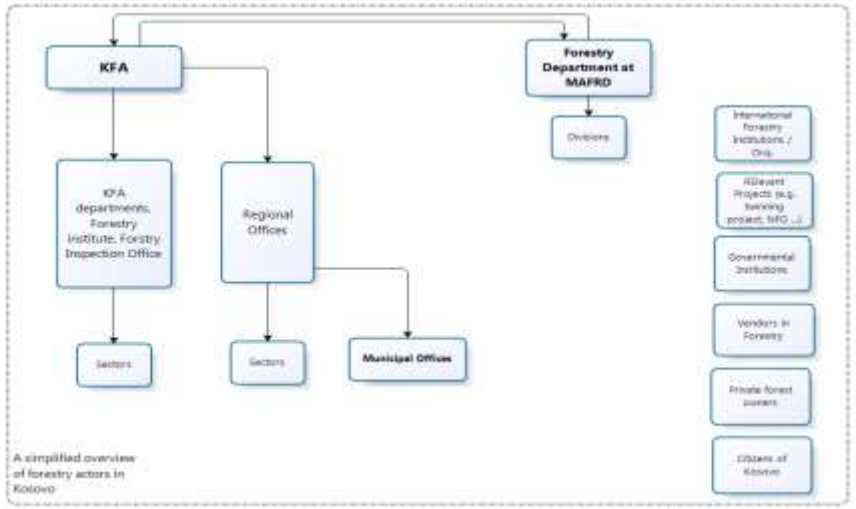
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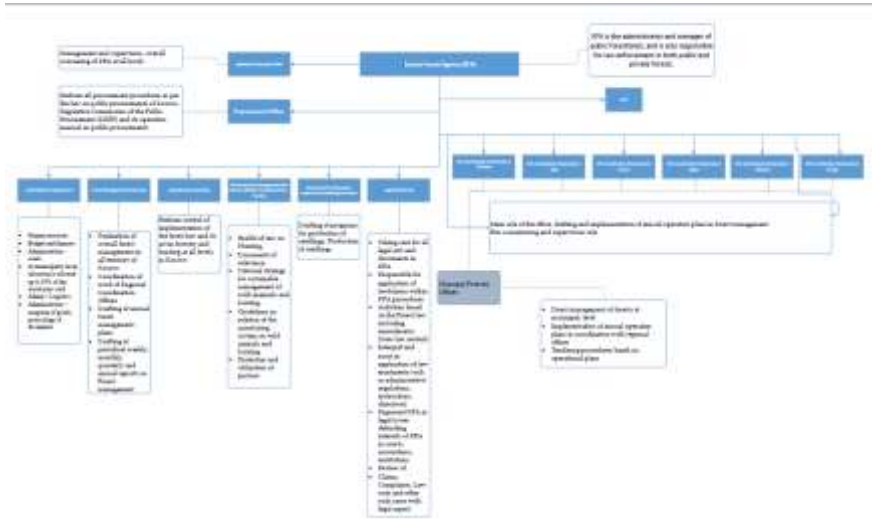
KFIS Users

The users of KFIS are grouped into:

Administrators
KFA national level
KFA regional level
Municipal level

MAFRD level
Private Forest Owners
External (NGOs Org…)
General Public





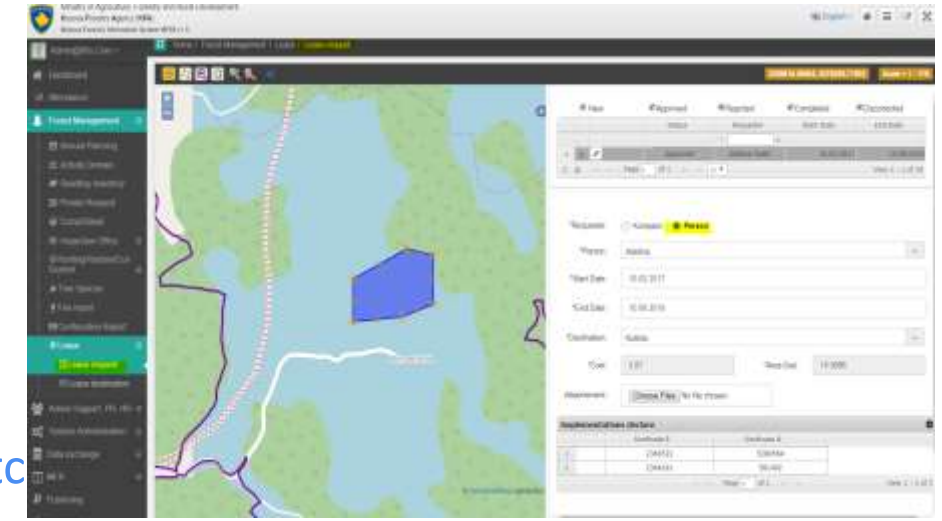
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KFIS Benefits

Application of Information and Communication Technology in Forestry emerged from its substantial role in enabling and delivering a good governance in the forestry sector.

Benefits for applying KFIS and ICTs in forestry are wide ranging, starting from:

Improving the overall operational level;
Evidence based decision making;
More efficiency and effectiveness in forest management;
Increase transparency;
Enabling and supporting public participation;
Reporting, managing sustainability;
Knowledge sharing and management;
Alignment of Kosovo forestry sector with international initiatives. etc

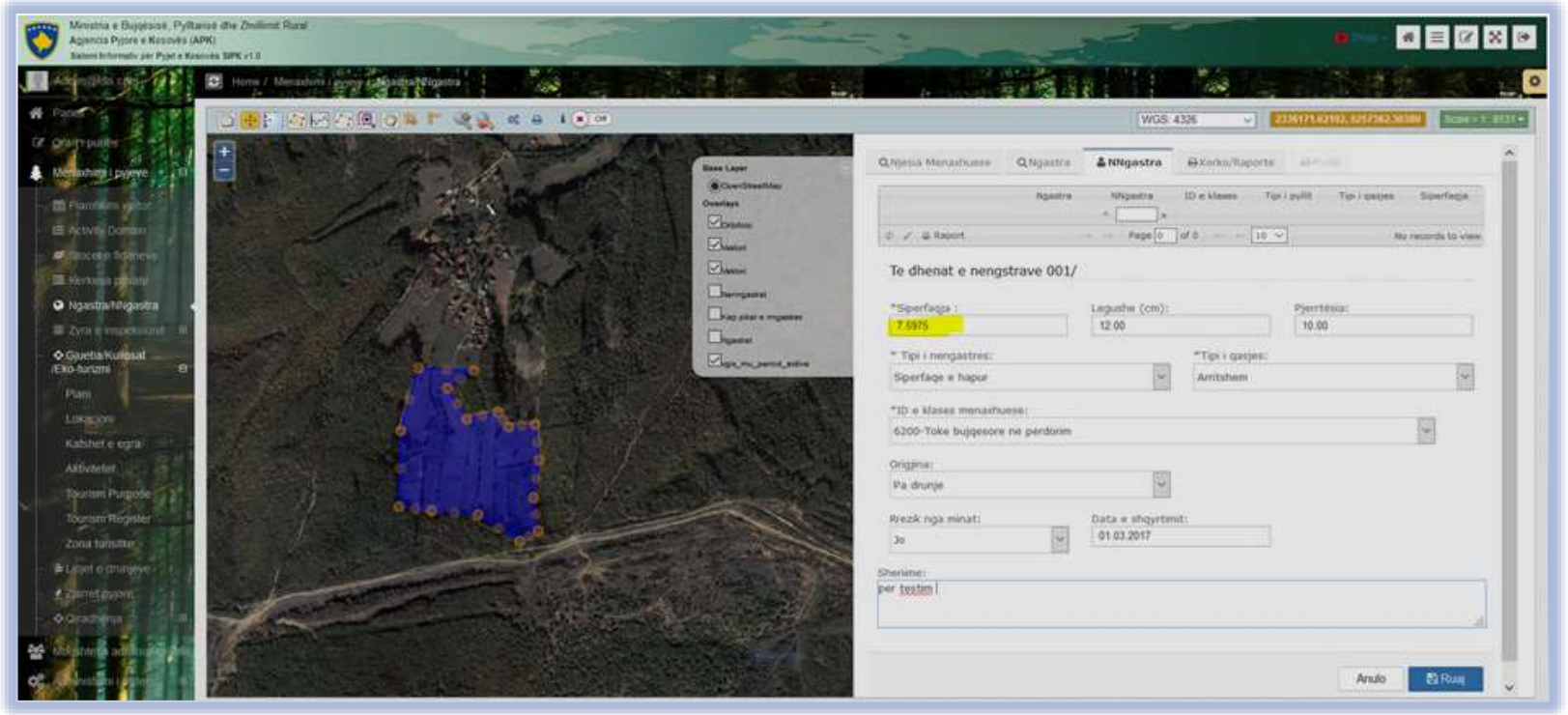


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KFIS Access

https://apps.geoland-kosova.com/kfis/

www.kosovoforests.org



THANK YOU

