Government of Nepal
Ministry of Agriculture and Livestock Development
Food and Nutrition Security Enhancement Project – II (FANSEP-II)
Terms of Reference (TOR)
For
Development of Project Management Information System (PMIS)

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Assignment title	Hiring of firm for developing Project Management Information System (PMIS) for FANSEP II
Contract ID	NP-MOALD-408927-CS-CQS_PMIS
Grant Number	TF-C1798
Project ID	P181087
Assignment duration	2 years, 7 months (December 2024 to June 2027)
Contract period	PMIS Development- 5 months (December 2024 to April 2025) PMIS Support -2 years and 2 months (May 2025 to June 2027)
Primary assignment location	Project Management Unit (PMU) and Project Cluster Units (PCUs)
Contracting entity	Food and Nutrition Security Enhancement Project II (FANSEP II) Harihar Bhawan, Lalitpur, Nepal. Phone: 977 1 01- 01-5552971, 5010108 Website: www.fansep.moald.gov.np. Email: fansep2018@gmail.com

A. Project Introduction

Food and Nutrition Security Enhancement Project II (FANSEP II) is designed to enhance climate resilience, improve agricultural productivity and nutrition practices of targeted smallholder communities in selected areas of Nepal. It will increase the resilience and reduce the environmental footprint of production by mainstreaming Climate Smart Agriculture (CSA) practices through project activities.

The Ministry of Agriculture and Livestock Development acts as the implementing agency for the project. The project is implemented in the same eight districts (four in mid-hills: Dolakha, Sindhupalchok, Gorkha, Dhading and four in Terai: Saptari, Siraha, Dhanusha, and Mahottari) of FANSEP. FANSEP II will scale up best practices under FANSEP to 16 new rural municipalities (two municipalities in each district), namely: Bateshwor, Janak Nandini, Samsi, Sonama, Chhinamasta, Mahadeva, Nawarajpur, Laxmipur Patari, Aarughat, Sahid Lakhan, Siddhalek, Galchi, Sunkoshi, Tirpurasundari, Melung, Baiteshwor.

The project will benefit 55,000 new direct beneficiaries from the 16 RMs (Rural Municipalities) through scaling-up of best practices from FANSEP. Among the 55,000 project beneficiaries, 38,750 beneficiaries will receive direct interventions from Components A and B
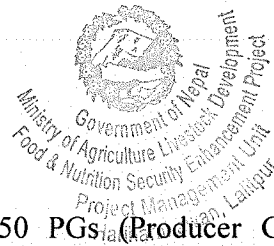
through the formation of 1,350 PGs (Producer Groups), while the remaining 16,250 beneficiaries will constitute 650 nutrition groups receiving interventions under Component C.

Project Development Objective and Components

The main objective of the Project (PDO) is to enhance climate resilience, and improve agricultural productivity and nutrition practices of targeted smallholder farming communities in selected areas of Nepal to be achieved through the following components:

Component A: Climate and Nutrition Smart Agricultural Technology Adaptation and Dissemination

      Subcomponent A1: Technology Adaptation and Testing

      Subcomponent A2: Technology Dissemination and Farmers' Skill Development

Component B: Income Generation and Diversification

      Subcomponent B1: Strengthening Producer Groups (PG)

      Subcomponent B2: Building Market Linkages through Productive Alliances

Component C: Improving Nutrition Security

      Subcomponent C1: Institutional Capacity Strengthening

      Subcomponent C2: Nutrition Field School (NFS) and Home Nutrition Gardens (HNGs)

Component D: Project management, communication, and M&E

B. Objective of the Assignment

FANSEP, a precedent project of FANSEP-II, had a PMIS to facilitate M&E functions. Although many of the forms and formats including indicators of the FANSEP-II match with the ones in the FANSEP, the system of FANSEP PMIS is not state of the art and was carried over from the Agriculture and Food Security Project (AFSP) and is cluttered with unnecessary forms, formats, and reporting mechanisms. Thus, a new PMIS which is easy and efficient with contemporary technologies is necessary. Hence this work is a new development of the system, not an update.

Therefore, the main objective of the consultancy services is to design, develop, deploy, and implement a robust Project Management Information System (PMIS) that supports the project (FANSEP II) in its implementation, monitoring, evaluation and reporting needs. Thus, through this contract the consulting firm will develop and help run a modern, dynamic, secure and reliable PMIS of FANSEP-II to record and retrieve information and generate reports based on project activities' implementation and their results.

This PMIS will help in producing reliable data on time to support evidence-based management decision making, promote transparency and accountability, and facilitate learning of the project. It documents data and information and facilitates tracking project results and activities on a regular basis to generate project reports at agreed intervals or when required through the PMIS.

C. Scope of the Work

The scope of work covers all the necessary activities including development, deployment, implementation, handholding and post implementation support, maintenance, support services and

all associated services as mentioned in the TOR for continuous improvement and operationalization of PMIS. The consulting firm will be responsible for the following:

➤ **System Analysis and Design:**
- Perform detailed study of the current rules, regulations and existing systems with respect to the modules that needs to be developed.
- Conduct a comprehensive needs assessment to gather detailed functional and non-functional requirements of the PMIS system.
- Develop system architecture that supports integration with existing infrastructure and future scalability.
- Prepare System Requirement Specification document (SRS).
- Prepare the System Design Document (SDD).
- Recommend the hardware and software requirement to implement the developed system.
- Develop the system
- The application should support both English and Nepali Language.
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➤ **Core System Modules Development:**
- The consulting firm need to develop a project MIS with different modules (Entry modules, input modules, output modules, dashboard modules) as mentioned in section D.1 and few more as required.

➤ **Training/ Capacity Building and Piloting:**
- The consulting firm is responsible to provide comprehensive training/onsite coaching to project personnel and PMIS users on its usage and operation and provide regular technical support to the project when necessary for smooth operation and necessary adjustments of project MIS.
- The firm shall be involved in piloting data entry and making sure any issues that are related to PMIS & M&E system are addressed at each stage of PMIS operationalization in the contract period.
- The Consulting Firm shall prepare and update PMIS training modules to provide training and onsite coaching on PMIS for relevant project staff.
- The firm shall also prepare and handover an operational manual in pdf/video for self-learning purpose.
- The consulting firm is responsible for the training and capacity development in relation to PMIS operationalization up to the cluster level. Such trainings can be onsite at the field level as well.

➤ **Data Security and Compliance:**
- Ensure the system complies with national and international data protection regulations.
- Implement robust cybersecurity measures to safeguard sensitive government data.

➤ **Cloud Services:**
- Ensure selection of reliable cloud services to provide performance, reliability, security, compliance, and compatibility with the PMIS system.

Dr. Arun Kafle
Project Director
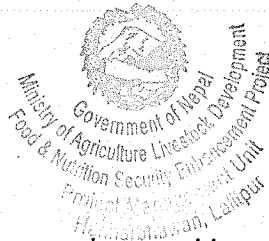
> **Handholding Support:**
>   - The Consulting firm is expected to provide manuals and guidelines for handholding support.
>   - All the bugs reported during the handholding phase shall be fixed by the consulting firm.
>   - Maintenance, up-gradating of PMIS portal and incorporation of additional user requirements during the handholding phase shall be the responsibility of the consulting firm.
> **System Maintenance, support and Upgrades:**
>   - The consultancy shall render both on-site and offsite maintenance and support services for a period up to June 30, 2027.
>   - Maintenance of the skilled and trained staff for the resolution of any issues and incorporation of changes, shall be done by the consulting firm.
>   - The consultancy will be responsible for technical back stopping, web hosting, data entry supports and follow up support services up to 30 June 2027.
> **Other activities to be performed by the consulting firm**
>   - Perform various testing activities and perform User Acceptance Test (UAT).
>   - Perform stress testing (tentative concurrent users may around 2000).
>   - Provide technical support for hosting, monitoring and maintaining PMIS system with operation support for the whole contract period.
>   - Carry out all the activities as per the standards and guidelines provided by Government Enterprise Architecture (GEA).
>   - Should perform all the software bug fixes that occurs from third party security audit during support period.

D. Specific Duties and Responsibilities of the Firm

Development of a clean, easy, efficient, secure, and a state of the art PMIS for the FANSEP-II (also called the project) and update and modification of PMIS in a timely fashion to make it more functional and dynamic as per the need of the project will be the primary task of the consulting firm. The consulting firm is also required to provide the following services in addition to those described in "C. Scope of the Work":

> Development, modification, and update of the PMIS to create platform appropriate and useful for digital data collection, electronic entry and generate analytical reports related to all aspects of the project including, but not limited to the modules mentioned **in section D.I below.**
> Enabling PMIS for producing reliable data and generate summary reports on time to support evidence-based management decision making, promote transparency and accountability, and facilitate learning of FANSEP II.
> Ensure data updates and track progress against the key result indicators of FANSEP II for supporting project progress report preparation and getting updates over key result indicators as per the requirement of the project
> Ensure PMIS software code security to protect the system from malware and other malicious software

- Ensure continuous functionality of PMIS and its data dashboard so that the project team can extract any data or information stored in the PMIS as needed
- PMIS system must be integrated into and accessible via the project website. The system must have compatibility and integrability with other relevant apps and software
- The system must support both English and Nepali languages
- Data Visualization and Business Intelligence Platform:
  - Sustainable platform with better performance and User Interface
  - Supportive of larger volume of data
  - Large sets of visualization tools
  - Compatibility of the components in the software
- Regular support to the project on PMIS to address technical issues, maintenance, smooth operation of PMIS (ensuring functioning of dashboard as per project requirements). This will require dedicated technical personnel assigned for the FANSEP-II PMIS purpose.
- Development and deployment of additional functionality that is scoped under the project (FANSEP II)
- Designing ICT architecture to be operated in a low-bandwidth environment
- Hosting and managing the server to make the server up and running
- Ensure data backups and restoration in case of system failures
- Iframe-based link integration with the FANSEP II website for specific Information or graphics report view of key project indicators.
- Ensure sustainability of PMIS so as to ensure data and system protection/security, archiving, project final source code and other designing program code of PMIS software handover to the client allowing accessing of data and information of the project after the accomplishment of the project.
- Perform any other PMIS-related tasks in close coordination with the FANSEP Project Director and Monitoring and Evaluation Section.
- Alternative data storage server provision for safe and sustainable use.

D.I. Development of Modules

The proposed system will have various modules and the modules are described below. Data entry for each module shall be done via mobile app and/or web, offline and online, with automatic updating. The consulting firm will develop PMIS system in such a way that data entered and updated in one module/form will automatically be integrated into the base and other related forms so that the project will have unified and updated information and profile of the beneficiaries, groups and other related.

Module-A: Entry Log Module (Accessibility, verification, and validation)

PMIS system should have differing levels of accessibility for different users. The system should also have processes for verification and validation of the data electronically at different level. Such verification and validation levels are by the technical experts (crop, livestock and nutrition for respective activities), cluster chief/officer, and cluster M&E specialists at a cluster level; Central specialist of FAO-TA and PMU M&E section at the PMU level. Access level and responsibility
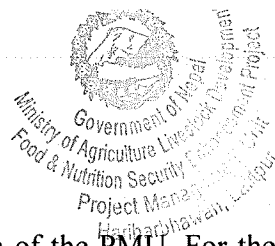
will be as assigned by M&E section of the PMU. For the current purpose, the access level and responsibility in PMIS of FANSEP II shall be as following:

Data Flow	Description	Remarks
Data Entry	Majority of the data will be entered in PMIS by Respective Cluster level specialist (Crop related data by Crop Production Specialist, Livestock related data by Livestock Production Specialist, Nutrition related data by Nutrition Specialist and Component 2 related data by Agribusiness and Enterprise Development Specialist). Entry persons will be restricted to their respective districts for crop, livestock, and nutrition specialists and their respective clusters for agribusiness and enterprise development specialists. However, PMIS must also allow direct data entry by the field level technicians (FLTs), as per the need of the project	The entered dada shall reflect in PMIS as Pending entries under Entry Log Menu
Verification (Level 1)	The entered Data will then be verified by Respective Cluster M & E Specialist. The Cluster M & E Specialist will have access of respective cluster.	The verified data from Cluster M & E Specialist shall reflect in PMIS as verified entries under Entry Log Menu.
Cluster Level Approval (Verification Level 2)	The verified data by Cluster M & E specialist are then approved by respective cluster Chief/cluster officer after critical review. They will have the access of respective cluster.	The data after verification by cluster chief/officer shall reflect in PMIS as Cluster level approved entries under Entry Log Menu.
Central Level Approval (Verification Level 3)	Data approved by clusters then verified and approved by PMU level specialists (crop, livestock, nutrition and agribusiness) of the respective components.	The data approved by central level specialists shall reflect in PMIS as central level approved entries under Entry Log Menu.
PMU level approved entries (Verification Level 4)	Finally, the data approved by PMU level specialists (crop, livestock, nutrition and agribusiness) are checked by M & E specialist and approved by senior M & E officer of the PMU. Only the data approved by senior M & E officer will be reflected in the report section.	The data approved by the senior M & E officer of the PMU shall reflect in PMIS as PMU level approved entries under Entry Log Menu.

Rejected Entries: As part of the verification process, if any errors/inconsistencies are found in the data, the respective verification authority will revert back the data sheet to the entry person with the reason for doing so. The entry person then rechecks the data and resend it after correction.

The entry process flowchart tentatively will be like:

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┌─────────────┐   ┌─────────┐   ┌──────────────┐   ┌─────────────┐   ┌─────────┐
│ Click Start │   │ Select  │   │ Select LMBIS │   │ Select Entry│   │ Fill the│
│ Entry in    │ ▶ │ Compone │ ▶ │ or other     │ ▶ │ form/Module │ ▶ │ form    │
│ Navigation  │   │ nt      │   │ Activity     │   │ s (Module B)│   │         │
│ panel       │   │         │   │ Name and Click│  │             │   │         │
└─────────────┘   └─────────┘   │ Submit       │   └─────────────┘   └─────────┘
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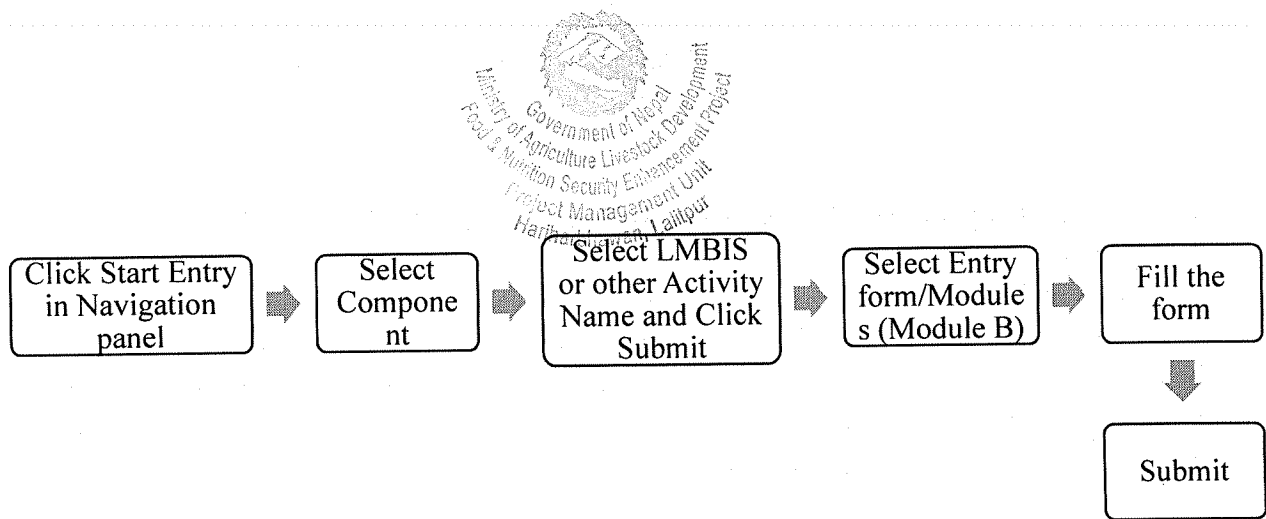
Figure: Entry process flowchart in PMIS

Module-B: Input-Module

User friendly Electronic Data Entry: FANSEP-II staff (cluster technical specialists and/or FLTs) will enter key data over activities implemented in the field either directly through the PC, smart phones and/or tablets or PMIS friendly excel/csv sheets or through different input modules. The PMIS, to the extent possible, must allow import/export function in excel/csv form and PMIS system should be compatible to upload those excel/csv based data files directly into the system. This requires development of android based software (Application) too. The PMIS consulting firm will upload already collected data before the full operationalization of PMIS and in the case of technical issues faced by PMIS users of FANSEP-II, it will be resolved by the same (the consulting firm). The system should also allow offline data entry when smart phones/ tablets become out of internet connection. The system must have cross-browser compatibility. Concurrently, the consulting firm shall develop the PMIS in such a way that the data collected from other online platforms (Like KOBO promoted by the GEMS of the World Bank) can be easily integrated into the PMIS. This means the system must be device responsive and API friendly.

Below are the lists of specific input modules to be prepared by the consulting firm in the PMIS. These modules will be built in such a way that the related original activities could be tracked and information from every related input forms will be automatically updated in other related modules and forms. The project will provide the detailed information under each module to be included in the PMIS by the consulting form.

Module B.1: Manage Group (Tracking of Group Details)

The PMIS will allow for tracking all details of the FANSEP II groups, including:

- Add groups,
- list groups,
- list all beneficiary of the group,
- edit group details (like add new members to group)

There must be provision for direct export of group data in PMIS from the excel. The excel sheet of group information that needs to be exported to the PMIS will be provided by the PMU. The group list along with their members will act as the base form for overall PMIS entry.

Module B.2: Crop Forms (Tracking all the beneficiaries receiving seeds/sets/saplings from FANSEP II)

Crop form will track detail information about the seeds/sets/saplings receiving beneficiaries from all components and activities. The input format of crop form that needs regarding this form will be provided by the PMU. The module must be developed in such a way that the excel form can directly be exported in PMIS. Likewise, relevant data input from other forms should also become updated in these forms with appropriate activity tracking.

Module B.3: Assets/Infrastructure Forms (Tracking all the beneficiaries receiving Assets/infrastructure from FANSEP II)

Assets form will track detail information about the Assets/infrastructure receiving beneficiaries from all components and activities.

Module B.4: Seed Form (Tracking all the information about the seed producer groups formed in FANSEP II)

One of the major activities under subcomponent A2: Technology Dissemination and Farmers' Skill of FANSEP II is promotion of community seed programs for improved seed replacement rate through establishment of 16 community-based seed production groups. For this, FANSEP II will form seed producer groups and provide them with the source seed for seed multiplication. This form will track the detail information about the producer group and their activities under seed production, processing and marketing. Module B.4 should allow tracking the information related to Seed production/multiplication.

Module B.5: Demonstration Form-Crop/forage (Tracking all the beneficiaries participating in "on farm demonstration of crop/forage" of FANSEP II)

FANSEP II through Subcomponent A1 (Technology Adaptation and Testing) under Component A (Climate and Nutrition Smart Agricultural Technology Adaptation and Dissemination) will support the implementation of improved climate- and nutrition-sensitive technologies and associated practices. One of the key activities to be supported under the subcomponent A1 is on-farm demonstration of CSA technologies and practices. Demonstration form for crop/forage will track detailed information about the on-farm demonstration related to crop/forage.

Module B.6: Demonstration Form-Livestock (Tracking all the beneficiaries participating in "on farm demonstration of livestock" of FANSEP II)

As mentioned in Module B.5, demonstration form for livestock will track detailed information about the on-farm demonstration related to livestock component (though under the livestock component, forage related information will be tracked in Module B.5. The detailed requirements about the form will be shared by the project.

Module B.7: Animal Distribution/Recipient form (Tracking all participants receiving animals from FANSEP II intervention)

FANSEP II have provision of distribution of different animals (Chicks, ducklings, goat etc.) under several activities like promotion program, home nutrition garden (HNG), matching grants, small

grants, NFS, etc. Module B.7 will ensure tracking detailed information regarding distribution of animals by FANSEP II activities.

Module B.8: Matching Grant form (Tracking detail information about the Matching grant of the FANSEP II)

FANSEP II will finance around 720 matching grant schemes for targeted beneficiaries from component B: Income Generation and Diversification. The matching grant schemes will be provided and implemented following the grant operating guidelines formulated under FANSEP. Module B.8 must allow to capture detailed information regarding matching grants financed by FANSEP II.

Module B.9: Small Grant form (Tracking detail information about the small grant of the FANSEP II)

FANSEP II will finance around 400 small grant schemes for nutrition/mother's group formed under component C: Improving Nutrition Security. Module B.9 must allow to capture detailed information regarding small grants financed by FANSEP II.

Module B.10: Crop Promotion Program form (Tracking detail information about the Crop promotion program of the FANSEP II)

FANSEP II will promote 325 crop promotion programs under Subcomponent A2: Technology Dissemination and Farmers' Skill Development. Module B.10 will track information pertaining to the crop promotion programs.

Module B.11: Small Irrigation record form (Tracking detail information about the small irrigation schemes of FANSEP II)

For enabling farmers to master the management skills (improved agriculture practices) to achieve climate resilience and mitigation, FANSEP II will intervene different activities under Subcomponent A2: Technology Dissemination and Farmers' Skill Development. Among the activities is the supporting 400 small-scale irrigation schemes covering 1,200 ha. Module B.11 allows capturing information pertaining to the small irrigation schemes.

Module B.12: Goat Multiplier Herd record form (Tracking detail information about the Multiplier herd of the FANSEP II)

FANSEP II will establish and operate 16 goat multiplier herds under Subcomponent A2: Technology Dissemination and Farmers' Skill Development. Information relating to multiplier herd program (no. of buck distributed, AI/NS provided to the goats, number of kids born, no, of bucks, goatlings and goat sold out, total income from selling these goats) will be tracked under module B.12.

Module B.13: Artificial Insemination record form (Tracking detail information about the AI centers supported by FANSEP II)

For enabling farmers to master the management skills (improved agriculture practices) to achieve climate resilience and mitigation, FANSEP II will intervene different activities under

Subcomponent A2: Technology Dissemination and Farmers' Skill Development. The activities include the establishment of 16 artificial insemination (AI) units. Module B.13 allows capturing information pertaining to the Artificial insemination centers including the name of AI technicians doing AI, animals inseminated, animals conceived (conception rate), number of straws used per conception, and types of calves born (male or female).

Module B.14: Training Form for Beneficiaries (Tracking all the group beneficiaries participating in Training/workshop/exposure visit/street plays of FANSEP II)

FANSEP II provides training/ workshop/exposure visit/street plays under different activities. Using Module B.14, all the information related to the group beneficiaries' training, workshops, exposure visits, and street plays should be tracked.

Module B.15: Training Form for Government or other stockholders (Tracking all participants from the government and other stockholders who participated in FANSEP II's capacity development support)

One of the RF indicators of FANSEP II is "*Persons receiving capacity development support, gender-disaggregated*". This indicator counts both the capacity development activities to technical staff for project delivery (e.g., training of trainers) and activities to enhance institutional capacities of project-related institutions. The capacity development activities will include not only formal training but all other types of tools such as on-the-job training, coaching, mentoring, exposure visit, exchange of good practice, peer to peer learning, etc. However, this indicator will not include trainings provided to people receiving direct benefits. Using Module B.15, all the information related to the capacity development support to the Government officials or other stakeholders should be tracked.

Module B.16: Market record form (Tracking detail information about the handling/processing and marketing infrastructure of FANSEP II)

From FANSEP II, around 32 critical infrastructures (16 Market structures and 16 handling/processing infrastructures) to support the strengthening of the Productive Alliances in the project RMs such as collection centers, storage, markets, and processing and grading facilities will be established to strengthen the supply chain and reduce postharvest losses. The module B.16 must be able to capture detailed information regarding marketing and handling/processing units supported by FANSEP II.

Module B.17: Filed School record form (Tracking detail information about the different categories of Field school under FANSEP II)

FANSEP II will Support for the conduction and establishment of 485 crop and livestock Farmer's field schools (FFSs) under Subcomponent A.2, 32 Farm business schools (FBSs) under Subcomponent B1, and 128 nutrition field schools (NFSs) under Subcomponent C2. Using Module B.17, all the information related to the different categories of field schools under FANSEP II be tracked.

Module B.18: Livestock promotion program record form (Tracking detail information about the Livestock promotion program under FANSEP II)

FANSEP II will Support 300 goat promotion programs, 120 dairy promotion programs, and 60 rural poultry promotion programs under Subcomponent A2: Technology Dissemination and
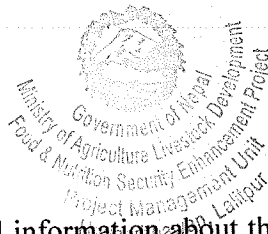
Farmers' Skill Development. Detail information about the livestock promotion programs will be captured through Module B.18.

Module B.19: Productive alliance record form (Tracking detail information about the Productive alliances under FANSEP II)

Under the Subcomponent B2: Building Market Linkages through Productive Alliances, FANSEP II will support formation and strengthening of 16 multi-stakeholders' dialogue platforms at the RM level. The module B.19 must be able to capture detailed information regarding productive alliance formed under FANSEP II.

Module B.20: Fodder resource nurseries record form (Tracking detail information about the fodder resource nurseries under FANSEP II)

Establishment of 16 community-level fodder resource nurseries supporting plantations covering 320 ha is one of the key activity under Sub-component A2. Module B.20 allows capturing information pertaining to the fodder resource nurseries supported by FANSEP II.

Module B.21: Crop productivity record form (Tracking detail information about the crop productivity under FANSEP II)

Increased crop and animal productivity by direct beneficiaries is the PDO level indicator of FANSEP II. The indicator is defined as improvements in production per ha or animal resulting from improvements in production practices through FANSEP-II interventions. As provisioned in PAD of FANSEP II, crop and livestock production are measured as the ratio of production (kg, MT, L) over the size of the land area or animal herd. Productivity for a composite group of agricultural products is measured as the weighted average of the productivity of the individual crops or animals, where each weight is based on the share of land/output allocated to that crop. FANSEP II aims to increase productivity of food grains and vegetable crops under component A. Food grains include rice, maize, and wheat. Vegetables include potato, tomato, cauliflower, bitter gourd, cucumber, bottle gourd, sponge gourd, pumpkin, okra, peas and beans, cabbage, radish, carrot, and brinjal.

Though the productivity will be measured by periodic surveys, productivity related information will be captured on regular basis in PMIS through module B.21. Data tracked through this module serve the triangulation purpose for data collected through surveys. For this purpose, PMU will provide the lists of beneficiaries, chosen randomly from the entire pool of beneficiaries, for the purpose of assessing productivity. The field level technicians will collect productivity data through crop cut surveys or record keeping of the sampled households. The guidelines about the crop cutting will be provided by the PMU. Module B.21 allows tracking crop productivity related information.

Module B.22: Livestock productivity record form (Tracking detail information about the Livestock productivity under FANSEP II)

As mentioned in Module B.21, Increased animal productivity by direct beneficiaries is the PDO level indicator of FANSEP II. Under livestock productivity, milk and meat productivity will be

measured. Livestock meat includes goat meat and milk includes cow and buffalo milk. The field level livestock technicians will collect productivity data related to meat and milk from the households shared by PMU. The guidelines about the productivity measurement of meat and milk will be provided by the PMU. Module B.22 allows tracking livestock productivity related information.

Module 23: NFS data record module
This module will allow to track the data related to the NFS including anthropometric measurements made during the NFS.

Module 24: Grievance Redressal Mechanism
This module will allow users to track the submission of complaints from the grievant and update the number of grievances redressed and pending.

Module 25: Environmental and social safeguards related data and information
This module will allow users to track the ESMF related information as per the requirements of the project.

Module 26: Upload of success stories and lessons learned:
The system should allow separate modules to upload success stories and lessons learned including pictures of before and after the activity completion. This needs to be published on PMIS only after the verification by concerned authority. Such stories/lessons could also be in the form of audios and short videos as well which could be uploaded instantly from the field by using smart phones or tablets.

Other modules as requested by the Project:

Apart from the information listed in the module above, the system should be able to capture requirements of regular National Planning Commission (NPC) based, Ministry of Agriculture and Livestock Development (MOALD) based, and Office of the Auditor General (OAG) based reporting information. Likewise, the reporting requirement of the World Bank should also be met by the PMIS. For this, project might request for additional input modules or modification/update in the abovementioned modules as per the requirement of the project. It is the consulting firm's obligations to meet all the requirements of project regarding input modules. Details about the input modules will be provided by the PMU.

Integration of GEMS/Kobo toolbox in the FANSEP II PMIS
The consulting firm should develop the system in such a way that the data collected through the KOBO tools/App will be integrated in the PMIS in an executable form. PMIS of the FANSEP II should be compatible and must be integrated with Kobo for the project at field/cluster/central levels for real time monitoring. GEMS team of the World Bank and the project team will provide technical feedback regarding this matter. In accordance with the project requirements, the PMU

will decide and guide which input modules (B.1 to B.25) or other modules need to be collected through Kobo collect and integrated into the PMIS.

Module-C: Report Module

The PMIS should have advanced report module. Report generation system must be customizable and dynamic to address the needs of the project. Such output reports are to be available on a timely basis, per activity as per GoN and the World Bank reporting format. The module should have different types and formats of reports. Many of such information should be displayed and updated on a real time basis on the dashboard as well. The reports module should be able to generate following reports:

Reports	Description
Group Reports	The group report should allow PMIS users to view/download ➢ RM/District/Cluster Wise Group Report ➢ Component/Subcomponent Group Report ➢ Subcomponent Group Report ➢ Group Report by Type of the Group ➢ Other group report as per the demand of PMU
LMBIS Activity Wise Report	The PMIS would generate LMBIS activity wise report based on the LMBIS activity index generated. PMIS should allow users to filter this report based on cluster, component and fiscal year.
Form wise Report	There must be form wise report in PMIS for each form mentioned under the Module B: Input Module and other modules as per requirement of the project.
Annex Report	**Annex-1: Total groups reached report (total unique group reached)** *This form will provide the sum of unique groups (the same group receiving more than one project intervention is counted as one, through assigning unique ID number to the groups of FANSEP II), disaggregated by component/subcomponent, receiving at least one project interventions. This form also allows detailed information regarding the number and list of interventions each group received from FANSEP II.* **Annex-2: Total beneficiaries reached report (total unique beneficiary reached)** *This form will provide the sum of unique beneficiaries (the same beneficiary receiving more than one project intervention is counted as one, through assigning unique ID number to the beneficiary), disaggregated by component/subcomponent and gender, receiving at least one project interventions. This form also allows detailed intervention about the intervention received by each beneficiary.* **Annex-3: Total household reached (total unique household reached)** *This form will provide the sum of unique households (the same household receiving more than one project intervention is counted as one, captured through unique HH ID of FANSEP II), disaggregated by component/subcomponent, receiving at least*

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one project interventions. *This form also allows the detailed information about the intervention received by each households.*

Annex-4: Crop seeds receiving beneficiaries (total beneficiaries reached through seed support)

This form will provide the sum of unique beneficiaries (the same beneficiary receiving more than one type of seed support is counted as one) receiving seeds through different activities of the FANSEP II. This form also allows the detailed information about the seeds received by each beneficiary.

Annex-5: Number of PG members provided with access to improved agricultural technologies

This report captures the unique number of PG members provided with access to improved agricultural technologies (On farm demonstration, fields schools, training, improved seed/breed support and equipment/asset support).

Annex-6: Farmers receiving inputs or services on climate resilient or sustainable agriculture practices

This is one of the intermediate indicators of result framework under component 1. This form will provide the sum of unique beneficiaries (the same beneficiary receiving more than one project inputs or services on climate resilient or sustainable agriculture practices is counted as one, through assigning unique ID number to the beneficiary), disaggregated by component/subcomponent and gender, receiving at least one input or service on climate resilient or sustainable agriculture practices. To ease the tracking of this indicator, each FANSEP interventions at activity/sub-activity level will be categorized as whether is it climate resilient or sustainable agriculture practices or not during data entry in PMIS.

Annex-7: Assets/infrastructure receiving beneficiaries

This form will give the total number of unique beneficiaries (a beneficiary who receives more than one kind of asset is counted as one) who have received infrastructure or assets through various FANSEP II interventions. This form also allows detailed information about the assets/infrastructure received by each beneficiary.

Annex-8: Farmers reached with agricultural assets/services

This is one of the intermediate indicators of result framework under component A. This form will give the total number of unique beneficiaries (a beneficiary who receives more than one kind of asset/services is counted as one) who have received assets/ services through various FANSEP II interventions, disaggregated by crop/livestock and gender.

Annex-9: Training/workshop/exposure visit/street drama for group beneficiaries

Counting the unique beneficiaries from the module B.14 (group beneficiaries participating in Training/workshop/exposure visit/street drama of FANSEP II), this form provides the total number of group beneficiaries receiving services from the FANSEP II. This form allows the disaggregation of information by component/subcomponent and gender.

Annex-10: Persons receiving capacity development support

One of the RF indicators of FANSEP II is "Persons receiving capacity development support, gender-disaggregated". Counting the unique beneficiaries from the module B.15 (all participants from the government and other stockholders who participated in FANSEP II's capacity development support), this form provides the total number of people receiving capacity development support, disaggregated by gender.

Annex-11: Description of beneficiaries receiving animal

This form provides the unique number of beneficiaries receiving animals under different interventions of FANSEP II. This form also allows the disaggregation of information by component/subcomponent, gender and animal type.

There might be additional modules besides those listed above that are required for the project, or the above mentioned modules may need to be modified or updated in order to meet the project's requirements. It is the consulting firm's obligations to meet all the requirements of project regarding output modules. Details about the output modules will be provided by the PMU.

Module-D: Dashboard/Data Visualization Module

As a part of PMIS operationalization, all the beneficiaries and producer groups and their details (as suggested by project) should also be integrated in PMIS. Many of such information should be displayed and updated on the dashboard in real time basis as well. The consulting firm shall develop and update a customizable and interactive dashboard to track incoming data in real-time. PMIS users at various levels must have access to a customizable data dashboard that tracks summary statistics in real-time to enable monitoring of inputs, activities, and outputs. It should include (but not limited to :)

1. Total time elapsed of the project (in percentage)
2. Total disbursement status (in percentage)
3. Total financial progress (in percentage)
4. Group summary (group numbers, members by component/subcomponent and by gender etc.) in pie and bar graphs
5. Total group **(unique)** reached (by component/subcomponent, by gender)
6. Total beneficiaries **(unique)** reached (by component/subcomponent and by gender)

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7. Updated Result Framework
8. GAFSP Fund Disbursement Report

Dashboard should comprise the following key characteristics:

    i) Granularity of Indicators

        a. Data that has been entered at the lowest geographic level can be clustered upwards so that it can be summarized at all levels.

        b. Where indicated, the project should be able to look at data and statistics and analyze them in disaggregated ways (age, gender, caste/ethnicity, etc.).

        c. Beneficiaries (individuals and groups) should be given unique IDs to enable various data analysis without double counts.

        d. Dashboard content will be as finalized by the Project.

    ii) Analytics for performance management

        a. System should allow stakeholders at each level to view data and statistics that are relevant to them.

        b. The system should allow for verification of information at each level of project management i.e. project cluster and central level. The clustered data will be verified by M&E specialist at central level and send to M&E section of PMU for final verification, the data should be visible to stakeholders.

        c. System should allow exploration by indicator and geographic levels (province, mid-hills, Terai, Rural Municipality, district etc.), but also summarized by other key implementation details for each project component (livestock, crop, and nutrition related interventions).

    iii) Access

        a. There should be multiple levels of access granted to the project personnel at cluster and central level with data management responsibility. However, the main administration (admin) access will be only at M&E Section of PMU.

        b. The dashboard should also be visible on desktop, laptop, mobile/tablet allowing easy data entry through the accessible devices.

E. Key Deliverables

The firm is liable to fulfil the other terms and deliverables mentioned in the other sections of this ToR as well. The system must follow all the standards and guidelines provided by Government Enterprise Architecture (GEA), so need to submit following, but not limited to, key deliverables:

S. N.	Deliverable documents	Due date
1	Inception Report (with detailed plan, technology/methodology, deliverables, timeline, software requirement specification, software design document, deployment plan, sprint wise progress report etc.)	Within 15 days after the contract
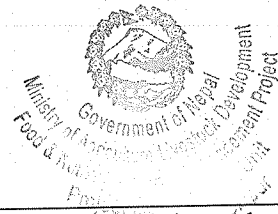
2	Main system development report, training plan, training manual and admin/user manual (both in English and Nepali language), Training Report and Test (UAT) Report	Within 3 months after the contract agreement
3	Piloting of the system report (Ensure appropriate participation in piloting exercise)	Within 4 months of the contract
4	Full scale go live PMIS (incorporating feedback from the piloting exercise for its smooth operation)	Within four and a half months of the contract
5	Annual completion report for year 1 (Incorporating all the tasks performed and result obtained in year 1 along with the source code)	Before June 30, 2025
6	Update, support and maintenance strategy document for year 2	Before July end, 2025
7	Regular update, operation and maintenance support for the second year, data backups for data protection, and provide technical support to PMIS users for Second year	Throughout the fiscal year 2025-26 (2082-83 B.S.)
8	Annual completion report for year 2 (Incorporating all the tasks performed and result achieved in year 2 and along with the source code)	Before June 30, 2026
9	Update, support and maintenance strategy document for year 3	Before July 30, 2026
10	Regular update, operation and maintenance support for the second year, data backups for data protection, and provide technical support to PMIS users for third year	Throughout the fiscal year 2026-27 (2083-84 B.S.)
11	Annual completion report for year 3 (Incorporating all the tasks performed and result achieved in year 3)	Before June 30, 2027
12	PMIS software handover to the client (along with final source code and other designing program code of PMIS software)	After the completion of the whole assignment (June 30, 2027)

F. Required Qualification and Experience of the Consulting Firm

The minimum qualification of the candidate shall be:

    a) Company or organization registered in accordance with the law of Nepal.

    b) Should have at least 5 years' experience in software development business and a successful experience in developing project MIS (preferably in agricultural projects).

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c) Demonstrated experience in designing, visualizing, developing, launching, and managing such web portal/platforms.

d) Ability to provide post implementation support.

e) The firm should have prior experience in Open Source Platforms Python/Django, Postgres, and AngularJS/React JS, GEOServer, *etc.* and contribution in those platforms will be an advantage.

f) ISO certification or any other standardization of the consulting firm is an added advantage.

g) Experience of working with Nepal Government and or donor funded projects is preferable.

h) Should have Tax Clearance Certificate/Tax return submission evidence for last Fiscal Year.

i) VAT /PAN Registration Certificate.

j) Should have technical skilled manpower that can be assigned for the project system development. Such technical manpower should have experience in current and modern technologies to prepare such platforms. Previous experience of such technical manpower in developing/updating Agriculture and Food Security related project MIS would be an advantage.

k) Should have experience in using state of the art technologies in the front end, back end and database system of the PMIS. Have experience in API friendly system development.

l) Should have good command of written and spoken English and Nepali.

m) Good Skill in preparing training modules, several M&E formats and delivering training activities to capacitate PMIS users.

G. Key Experts and their Qualification

The estimated team composition is provided below, however, the consulting firm are advised to propose their own staff composition and staff input requirements for efficient performance of their job as per the Terms of Reference. The consultant should, however, ensure that the minimal number of important professionals is not fewer than those listed below.

S.N.	Position	Number	Minimum Qualification and Experience
1	Project Manager/Team Leader	1	Master's degree in any stream having sound knowledge in ICT with at least 10 years of experiences in related field
2	Software/web Developer	2	Bachelor's degree in information technology or related discipline with at least 2 years of professional experiences in related field
3	UI/UX designer	1	Bachelor's degree in information technology or related discipline with at least 2 years' experience in related field.

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| S.N.	Position	Number	Minimum Qualification and Experience
4	Database Designer	1	Bachelor's Degree in IT related field with at least 2 years of experience in related field
5	Quality Assurance Analyst	1	Bachelor's Degree in IT related field with at least 2 years of experience in related field
6	System Architect Analyst	1	Bachelor's Degree in IT related field with at least 5 years of experience in related field
7	Android/IOS developer	1	Bachelor's Degree in IT related field with at least 2 years of experience in related field
8	Information Security Expert	1	Bachelor's Degree in IT related field with at least 5 years of experience in related field
9	Documentation Expert	1	Bachelor's degree in any stream with good knowledge in ICT, with at least 2 years of experiences in related field

Note: In addition to the abovementioned manpower, the consulting firm shall make a dedicated technical personnel available for the contract period on an as and when required basis for smooth operation and necessary adjustments of project MIS and data input facilitation.

H. Timeline and Duration of the Assignment

Total duration of the assignment would be 2 years and 8 months. The inception report should be submitted within 15 days of the agreement. Development of the main system and incorporation of major forms and reports as mentioned in the Section "D.I. Development of Modules" shall be completed within 3 months after the contract agreement. Development of the application system for smart phones and the tablets along with seamless integration with the PMIS shall be finished within 4 months of the contract agreement. This also applies to integration of KOBO system as promoted by the GEMS team of the World Bank. The consulting firm shall complete trainings about the FANSEP-II PMIS and its operation along with the hands on manual within two weeks of the system development. The PMIS piloting should be completed within four months after the agreement and the full scale PMIS should be go-live by four and half months of the agreement. The consulting firm shall provide support and maintenance service for acceptance of system. The consulting firm will be responsible for technical backstopping, web hosting, data entry supports, data protection, archiving and technical support services up to the project closing period i.e. 30 June 2027. The consulting firm shall provide support and maintenance service for additional six months from 30 June 2027 as a support warranty next to User Acceptance. The consulting firm is expected to work within and outside Kathmandu mostly in the same coverage area of FANSEP-II i.e. (PMU, PCUs and command area RMs).

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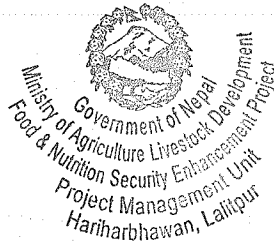
I. Selection Procedure

The consulting firm shall be selected through Consultant's Qualification Based Selection (CQS) method in accordance to 5th Edition of the World Bank's Procurement Regulations for IPF Borrowers, September 2023.

J. Indemnity

The relevant consulting firm in relation with PMIS shall be responsible for any damage of life, property that may arise out of his works and firm shall take all necessary insurance provision to indemnify any claims for compensation that may arise through negligence.

K. Reporting Requirements

The consulting firm shall work under the overall guidance and supervision of Project Director. However, the consultant shall work in close and direct guidance and supervision of M & E team of the project led by Senior Monitoring and Evaluation officer regarding the accomplishment, updates and any issues and way forward related to the given assignment. At the cluster level, the consultant shall undertake the assignment in close coordination with the PCU team. However, the system level adjustments should be authorized from the M&E team led by M&E Section of the PMU. The consulting firm should directly report to the M&E Section of the PMU.

## L. Ownership and privacy policy of the data generated

The copyright of PMIS data and code will remain with FANSEP II/the Government of Nepal and it should not be used or shared with a third party without the permission of the Nepal Government. In cases where consulting firm infringes any matter contained in this section, the firm shall be punished as per the Nepal government's Rules and Regulations.

M. Financial provision and Payment conditions

➤ This will be a lumpsum contract. The consulting firm will provide services throughout the duration of the project, which is scheduled to conclude on June 30, 2027 (F.Y. 2083/84). Consequently, the consulting firm is required to submit a proposed contract price for the full contract period (up to June 2027), taking into account the objectives, scope, and key deliverables outlined in this Terms of Reference (ToR). However, it is important to note that the assignment or contract will be extended until the project's completion (June 30, 2027), provided that the "Key Deliverables" specified in section "E" are met satisfactorily.

➤ The total contract amount will be divided into 3 fiscal years (F.Y. 2081/82, 2082/83 and 2083/84).

➤ In current fiscal year (F.Y. 2081-82), the consulting firm must complete the task of system development, piloting, training to PMIS users as well as required support and maintenance. Therefore, payment for the first year depends on accomplishment of deliverables 1, 2, 3, 4 and 5 of the Key Deliverables table (Section E).

➤ The annual budget, along with the number of installments and the amount for each installment, will be determined by the terms of the contract.
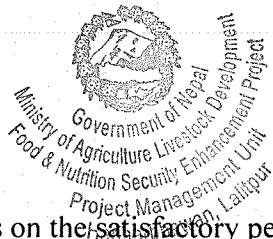
- Payment in the second year depends on the satisfactory performance by the consulting firm in the current fiscal year (year 1) and satisfactory fulfillment of deliverables 6, 7 and 8 of the Key Deliverables table (Section E).
- Payment for the third year depends on the satisfactory performance by the consulting firm in the second year and satisfactory fulfillment of deliverables 9, 10, 11 and 12 of the Key Deliverables table (Section E).
- The consulting firm will arrange and purchase a separate private hosting service in addition to the server hosting in the government system.
- It is to be noted that contract would be considered completed only once all the assigned tasks are completed, tested and are fully operational to the satisfaction of the project.
- The consultant shall be responsible for all the taxes and duties including income tax applicable as per the Government of Nepal's Rules and Regulations.

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User Management Module

The system shall have the user management module where the users of the system should be able to be created and managed by the admin. The users should be able to access the specific features and functionalities based on the roles and rights assigned. The general user types of the system are listed below. Additional users can be added in the future based on the project's requirement:

- Admin Users
    - Senior M & E Officer of the project
    - Monitoring and Evaluation Specialist of FAO-TA to FANSEP II
- Central Level Users
    - Project director
    - Senior officer at PMU
    - Agriculture officers at PMU
    - Specialist of the FAO-TA to FANSEP II
        - Livestock Production Specialist
        - Crop Production Specialist
        - Agri-Business and Market Linkage Specialist
        - Capacity Development Specialist
        - Gender, Environment and Social Safeguard Specialist
        - Nutrition Specialist
- Cluster level Users
    - Cluster M & E Specialist
    - Cluster Agribusiness and Enterprise Development Specialist
    - Cluster Crop Production Specialist
    - Cluster Livestock Production Specialist
    - Cluster Nutrition Specialist
    - PCU officer and PCU chief
- Field level Users (Who fetch data through android App)
- Guest Users (World bank, MoALD, and other as specified and recommended by PMU)

The admin users of the project (FANSEP II) should be able to create users under them and then assign specific roles and rights.

In features level following are the features to be available in the system

- User Creation/ Update and Delete
- User Login
- User Roles and Rights assignment
- Forgot Password
- End-User Registration
- Reset Password
- Deactivate/ Activate user
- Profile Management

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Master Data Module

The system should have master data module where different master data can be managed. These data should be able to be created, updated, and deleted.

- Component
  - Add component
  - List component
- Subcomponent
  - Add Sub-component
  - List Sub-component
- Cluster
  - Add Cluster
  - List Cluster
  - Edit Cluster
- District
  - Add District
  - List District
  - Edit District
- Rural Municipality
  - Add RM
  - List RM
  - Edit RM
- Manage LMBIS Activity
  - Add LMBIS Section
  - View LMBIS Section
  - Add LMBIS Activity
  - View LMBIS Activity
- Crops and Crop Varieties
  - Add Crop
  - Add Crop Variety
- Livestock and Livestock Breeds
  - Add Livestock
  - Add livestock breed
- Import from excel
- Excel format downloads

Many more as per requirement of the project and as necessary for the Modules mentioned in section D.I. and their updates and modification

NON-FUNCTIONAL REQUIREMENTS

Architecture Requirement

The proposed architecture should support open standards. It should be scalable and should ensure the performance during all times. Peak load should be considered as 200 (two hundred) concurrent users. There should not be any kind of lag while using the system during data entry or during the

report generation. Architecture should be scalable when the number of users increases without doing the code level modification. It should be flexible enough to support plug in and plug out of the modules as per future requirement. Architecture should be highly secure as it contains very sensitive government data.

Application Security Controls
The application shall include, at minimum, the following security controls:
- Data input validation controls
- Data process validation controls
- A message authentication system for sensitive forms/data requiring high data integrity during data transmission (if any)
- Data output validation controls
- Strict access restriction to program source libraries.

Web Security Controls
The information relating to users of the system shall be secured by devising an appropriate level of controls.
- The data about users shall be stored on in a RDBMS. A browser-based interface shall be provided to users for managing their passwords and other identification credentials. Features such as minimum password length, minimum number of numeric characters, forced password change with optional grace login, non- dictionary words; password history etc. shall be implemented
- The solution shall restrict access for editing and modifying the information of producer groups or any information in the database to all the users except the M&E personal who is responsible to the system.
- The solution shall provide a robust and customizable security solution and shall be based on a platform that should grow with additional application deployment and scales as user traffic grows, while providing the highest level of reliability is required.
- The solution shall provide for session settings such as idle or max session time-outs, concurrent sessions and other session control settings.
- The solution shall examine all traffic to all services / pages being protected by the solution. All access attempts to the web server / application shall be intercepted and examined for authentication and authorization requirements.
- The solution shall be capable of notifying appropriate parties including the department user / security administrators etc. for any kind of suspicious activity.
- The portal environment, including the documents uploaded by the users, shall be adequately protected against viruses. All documents uploaded by the users shall be subjected to virus scan before accepting.
- The system shall provide two layers of access control over the creation/ modification of user profiles. For the first login by a user, the system shall prompt the user to change her/his password. When a user logs in, the system shall display the date & time of last login.
- The system shall maintain a log of all the activities carried out by a user along with a date and time stamp.