



# Detailed Architecture

MeghEA: Strategic Pillar - Primary Sector

Government of Meghalaya  
Planning Department

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# Document Control

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## Acronyms

Abbreviation	Expansion
AAA	Authentication, Authorization, and Accounting
ADO	Agriculture Development Officer
AFW	Agriculture & Farmers Welfare Department
AHVO	Animal Husbandry and Veterinary Officer
AHVT	Animal Husbandry and Veterinary
APIs	Application Programming Interface
AWS	Automatic Weather Station
BI	Business Intelligence
BPR	Business Process Reengineering
C&I	Commerce & Industry
C&RD	Community & Rural Development
CSS	Central Sponsored Schemes
DBT	Direct Benefit Transfer
DCIM	Data Centre Infrastructure Management
Department of Agriculture	Agriculture & Farmers Welfare Department
DFC	Digital Facilitation Centre
DLP	Data Loss Prevention
DMZ	Demilitarized Zone
DoNER	Development of North Eastern Region
DR	Disaster Recovery
DSS	Digital Service Standard
DW	Data Warehouse
ESB	Enterprise Service Bus
ETL	Extract Transfer Load
FCS	Food Civil Supplies and Consumer Affairs
FIS	Fisheries
G2B	Government to Business
G2C	Government to Citizens
G2E	Government to Employee
G2G	Government to Government
GFLI	Global Food Loss Index
GIS	Geographical Information System
GoM	Government of Meghalaya

Abbreviation	Expansion
GRAS	Government Receipts Accounting System
GSDP	Gross State Domestic Product
HDO	Horticulture Development Officer
HRMS	Human Resource Management System
IAM	Identity & Access Management
ICT	Information Communication Technology
ID	Identification
IndEA	India Enterprise Architecture
iOBS	Integrated Budget Information System
IPS	Intrusion prevention systems
IT	Information Technology
IVRS	Interactive Voice Response System
KMS	Knowledge Management System
KPI	Key Performance Indicator
LAMP	Linux, Apache, MySQL, PHP/Perl/Python
LAN	Local Area Network
LDAP	Lightweight Directory Access Protocol
LGD	Local Government Directory
LMS	Learning management System
LOA	Letter of Allotment
M&E	Monitoring & Evaluation
MeghEA	Meghalaya Enterprise Architecture
MeghEIS	Meghalaya Employee Information System
MIDH	Mission for Integrated Development of Horticulture
MIS	Management Information System
MOVCD	Mission Organic Value Chain Development
MSY	Maximum Sustainable Yield
MVA	Minimum Viable Architecture
NAS	Network Attached Storage
NeGD	National E-Governance Division
NFSM	National Food Security Mission
NGO	Non-governmental organizations
NIC	National Informatics Centre
NMSA	National Mission for Sustainable Agriculture
NOC	No Objection Certificate
OS	Operating system

Abbreviation	Expansion
OTP	One Time Password
OWASP	Open Web Application Security Project
PDP	Policy Decision Point
PFMS	Public Financial Management System
POS	Point of Sale
RAD	Rainfed Area Development
RFID	Radio-frequency identification
RKVY	Rashtriya Krishi Vikas Yojana
RTGS	Real-time gross settlement
SAML	Security Assertion Markup Language
SAN	Storage Area Network
SCM	Supply Chain Management
SDC	State Data Centre
SDG	Sustainable Development Goal
SIEM	Security Information and Event Management
SLA	Service Level Agreement
SMAM	Sub-Mission on Agricultural Mechanization
SMART	Specific, Measurable, Attainable, Realistic, and Time-bound
SME	Small Medium entrepreneurs
SMS	Short Message Service
SOC/NOC	Security Operations Centre/ Network Operations Centre
SRM	Security Reference Model
SSO	Single Sign-On
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TEX	Textiles Department
TRM	Technology Reference Model
UC	Utilization Certificate
UI	User Interface
UIDAI	Unique Identification Authority of India
UTM	Unified Threat Management
UX	User Experience
VPN	Virtual Private Network
WAN	Wide Area Network

# 1. Introduction

Government of Meghalaya has prudently adopted Sustainable Development Goal 2030 as the guided baseline for MeghEA framework and embarked on efficient and effective governance by establishing of four strategic pillars (Human development, Primary Sector, Infrastructure and Entrepreneurship) and two cross-cutting pillars (Environment and Governance).

Agriculture continues to be the dominant sector of Meghalaya economy where 70% of the total population depends on it directly or indirectly. The contribution of this sector to the state's economy is around 23% of GSDP. Meghalaya is endowed with suitable climatic conditions to grow a wide range of field crops, horticultural crops, aquaculture, export-oriented crops. Agriculture and allied sector growth is key to establish price stability, food security, income and livelihood of farmers as agriculture continues to be the largest employment generating activity. The state has deployed large number of schemes that are in operation by all the line departments, attempting to improve the agricultural production and providing storage and marketing facilities to farmers. The key achievements of the sector include:

- Meghalaya has empowered farmers, and has facilitated citizen transparency through central and state level schemes
- Government has brought about modernization in agriculture in the state through various demonstration Programmes and Extension services in updated technology.

Continuous efforts are directed towards overall welfare of the farming community to ensure timely supply of essential inputs with effective transfer of technology through improved and enhanced service delivery, streamline internal processes and enable data-driven decision making to achieve maximum output from the available natural resources. To attain overall empowerment of farmers in Meghalaya by increasing the production from agriculture and allied sectors, increasing access to marketing and processing facilities, improving storage facilities as well as bringing many business and markets reforms by ICT channels as service enablers.

## Purpose of Detailed Architecture Requirement

The document explains pragmatic enterprise architecture approach from Vision to actionable framework to improve the cohesiveness amongst the services of Departments, responsible for the growth of primary sector. List of departments contributing and responsible are as below,

- Agriculture & Farmers Welfare Department
- Animal Husbandry & Veterinary Department
- Fisheries Department
- Textiles Department
- Food Civil Supplies & Consumer Affairs Department

This document remains part of overall Meghalaya Enterprise Architecture document, focusing on detail on “Primary Sector” strategic pillar and should be read accordingly. The interconnected flow and rest details can be found in main document, various common systems and their architecture.

## Target Audiences

The Detailed Architecture includes inputs from various key stakeholders. This document would be further reviewed and used for implementation by the following stakeholders:

- Agriculture & Farmers Welfare Department
- Animal Husbandry & Veterinary Department
- Fisheries Department
- Textiles Department
- NIC Meghalaya
- Project Coordination Committee
- National E-Governance Division (NeGD)

The Detailed Architecture document and incorporated artifacts would lead to an overall project plan with measurable business success metrics post stakeholder buy-in.

*Note: Food Civil Supplies & Consumer Affairs has been covered under Human Development Pillar Detailed Architecture Requirement document.*

## This document is organized as per the below Sections

Chapter 1 – Introduction

Chapter 2 – About the Pillar

Chapter 3 – Primary Sector - Business Architecture

Chapter 4 – Application Architecture

Chapter 5 – Data Architecture

Chapter 6 – Technology Architecture

Chapter 7 – Security Architecture

Chapter 8 – Architecture Realization

Chapter 9 – Annexure of various key analysis

## 2. About the Pillar

### 2.1 Primary Sector Overview

The production of food, efficient movement of goods from farm to market and livelihood improvement of farmer is a critical factor in Meghalaya agriculture's competitiveness.

The economy of Meghalaya is basically agrarian as it is rural based with Agriculture and allied activities playing a predominant role in the state's economy. Since, 70% of the state's population depends on Agriculture, thus employment and income generation also depend on agricultural developmental activities to a great extent. The State is yet to touch the National Level in economic and agricultural growth rate even after attaining full statehood more than forty-eight years ago. The State is slowly and steadily progressing inspite of the numerous constraints and limiting factors.

To deliver services, different offices/ delivery centers available in departments contributing to Primary Sector are defined in table below:

Sr. No.	Attribute	Agriculture	Animal Husbandry	Textiles	Fisheries
1	No of Directorates & Agencies	6	3	1	2
2	No of District Offices	32 (17 Agri + 15 Horti)	11	21	11
3	No of Sub-Divisional Offices	4	4	0	4
4	No of Block Offices	39	46	0	0
5	No of Circle Offices	22 (16 Agri + 6 Horti)	0	0	0
6	No of Government Farms, Hubs and Nurseries	32	41	31	15
7	No of Veterinary Hospitals	0	4	0	0
8	No of Veterinary Dispensaries	0	135	0	0
9	No of Veterinary Aid Centers	0	50	0	0
10	No of Mobile Veterinary Dispensaries	0	15	0	0
11	No of Vigilance Unit	0	7	0	0
12	No of Processing Units	4		66	0
13	No of Schemes	27 Agri + 23 Horti	14	12	12

Table 1: Offices/ Delivery Centers in Primary Sector

Agriculture & Farmers Welfare Department has their presence in districts, blocks and circles. Farmers can approach these offices for availing the services related to agriculture. There are **173** sanctioned posts for **ADOs** and **HDOs** supported by other office staff to assist farmers in availing benefits of almost **50** schemes however, only **80** posts are filled up currently (32 ADO and 48 HDO). There are **32** Government Farms and Nurseries in the state from which farmers and citizens can purchase quality seeds, saplings, grafted fruit plants etc. at minimum prices.

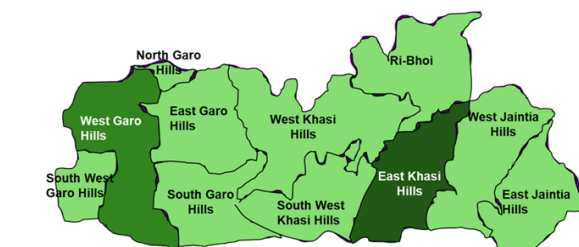
Animal Husbandry and Veterinary department has presence in district through directorate office but has 34 Government Farms for the citizens to procure high genetic merit germplasm, day old chicks, hatching eggs, etc. Further, there are **4** Veterinary Hospitals situated in Shillong, Tura, Nongstoin and Jowai. In addition, there are **114** Veterinary Dispensaries, **50** Aid Centers and **15** Mobile Veterinary Dispensaries where citizens/ farmers can approach to avail services like treatment, vaccination and surgery for their animals and birds in addition to artificial insemination and extension services. For dairy development, there are **7** plants out of which only **3** are operational.

Fisheries has presence in all districts and four of the Sub-Divisions to provide Financial & Technical Assistant, Training, Inputs (Fish Seeds, Fish Feeds, Etc.), Supply (Refrigerated trucks), Markets platforms in term of retail outlets for the farmers to sell their produce. The department creates infrastructure to increase fish production in the state and provide necessary support to farmers to achieve the same. The Department is in the process of setting up Laboratory for testing of components related to the Fish Farming. The department has 3 training center in three district and one training institute at MSFRTI.

Textiles Department has eleven (**11**) seed farms out of which 6 are for mulberry, 3 for Eri and 2 for Muga. There are thirteen (**13**) nurseries out of which **9** are for mulberry and **4** for Muga to rear planting materials in different Districts. There are ten (10) number of training institutes located in various districts which are meant for imparting various courses of training.

The graphical representation of the facts is placed below for better understanding:

### Agriculture Block Offices



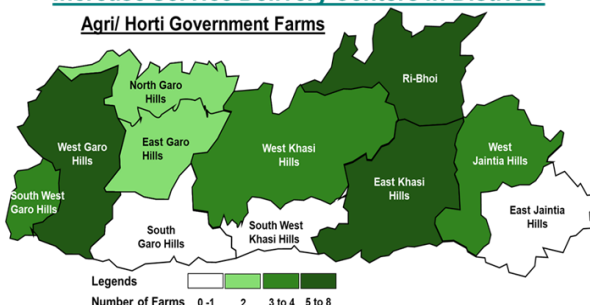
**Legends**  
Number of Block offices

<=4	>4 and <=8	>8
-----	------------	----

- There are 39 block offices to deliver services. The presence can be extended to all 46 blocks.
- There are 22 circle offices in the state.
- There are 4 or less block offices in some large districts which can be increased.

### Increase Service Delivery Centers in Districts

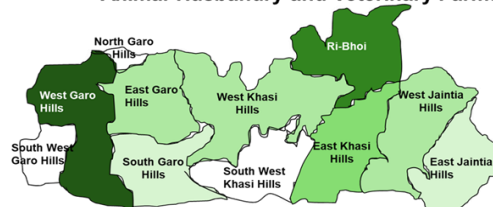
#### Agri/ Horti Government Farms



- There are 32 Government Farms spanning across 11 Districts. Government farms in 3 districts should be increased.
- There are 3 or more Government farms in rest of Districts except North Garo Hills and East Garo Hills

### Increase concentration of Government Farms for delivery of seeds, plantation, rhizomes

### Animal Husbandry and Veterinary Farms



**Legends**  
Number of Farms

0	1 to 10	11 to 20	21 to 30	31 to 40	41 to 50
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- There are AHVT farm in 8 districts. Farms in rest of the districts i.e. South West Khasi Hills, South West Garo Hills and North Garo Hills should be opened.
- Government farms in East Jaintia Hills and South Garo Hills should be increased.
- Low farm to farmer ratio compared to neighboring state

### Increase Farm to Farmer ratio in the State for enhancing Service Delivery

#### Veterinary Institutions



**Legends**  
Number of Institutions

Upto 10	11 to 20	21 to 30	31 to 40
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- Good number of Veterinary Institutions in 8 districts.
- East Khasi Hills has maximum number of Veterinary Institutions.
- Increase Veterinary Institutions in South West Khasi Hills, East Garo Hills & South West Garo Hills.

### Increase Institution facilities to treat ailing animals

### Sericulture - Government Farms and Nurseries



**Legends**  
Number of Farms/ Nursery

0	1	2	3	4	5 or more
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- Sericulture has office presence in 7 Districts. Offices should be opened in rest of the districts.
- 8 Districts has Government Farms and 7 Districts has Nurseries.
- 66 Processing Units in 10 districts.

### Increase Farm to Farmer ratio in the State for enhancing Service Delivery

## 2.2 Vision of Primary Sector

The State of Meghalaya has set up a vision to become a “High Income State” by 2030 and to be in the Top ten states in India in terms of GSDP per capita. Primary Sector, which is a key component in the State’s strategy, needs a vision to ensure the realization of the ambitious target set by the State. Accordingly, its vision is: -

- To be in the top 10 states in Agricultural Marketing and Farmer Friendly Reforms Index
- To be among the top 10 states in agriculture production growth.
- To achieve self-sufficiency in food grains production.
- To produce and ensure safe food for all.

## 2.3 Mission of Primary Sector

Achieve the 6 As:

- **Aware** - Build Awareness About the Services Being Provided to The Farmers
- **Avail** - Empower Farmers to Avail Services at Their Convenience
- **Aspire**- Aspire to realize Food Security in terms of sustainable Production and Productivity
- **Associate** - Connect Buyers and Sellers and Enhance Supply Chain
- **Accelerate** – Accelerate the innovations to Improve Food Supply Chain
- **Achieve** – Achieve higher yield and improve Economic Livelihood of Farmers

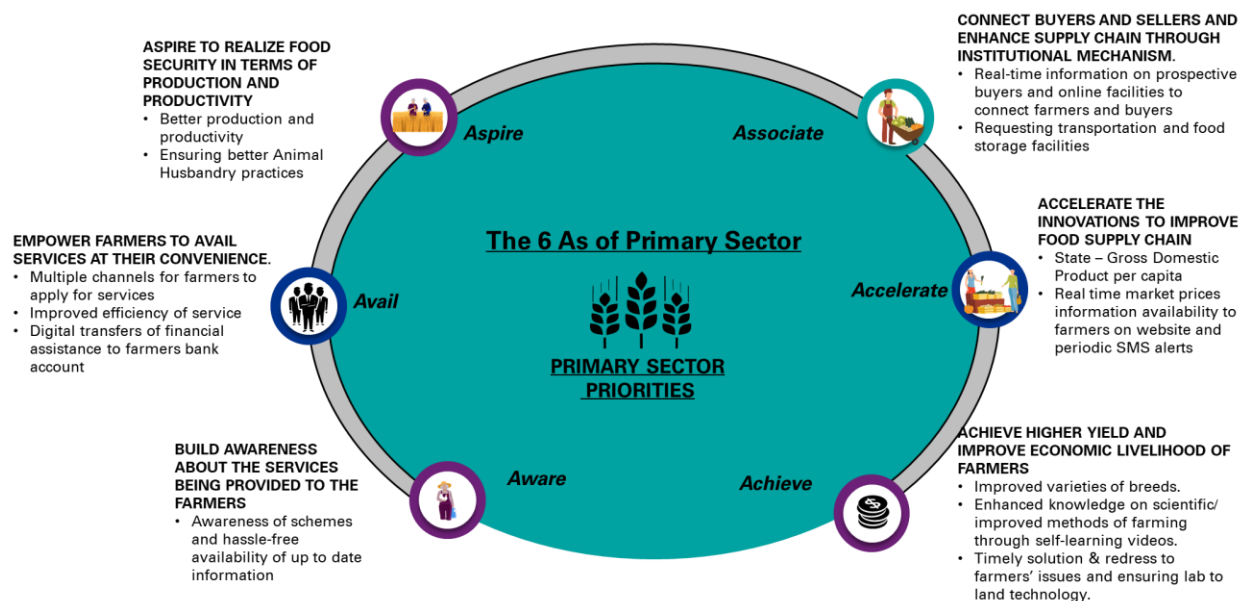


Figure 1: Primary Sector Mission- 6 A

## 2.4 Primary Sector - Departments Structure

The departments under Primary Sector are structured in respective directorates that has mostly exclusive functional role and responsibilities. The table below is broad representation of departments and the government agencies/ directorates under Primary sector.

The organization structure of Agriculture & Farmers Welfare department, Animal Husbandry and Veterinary department, Fisheries department, Textiles department is illustrated below:

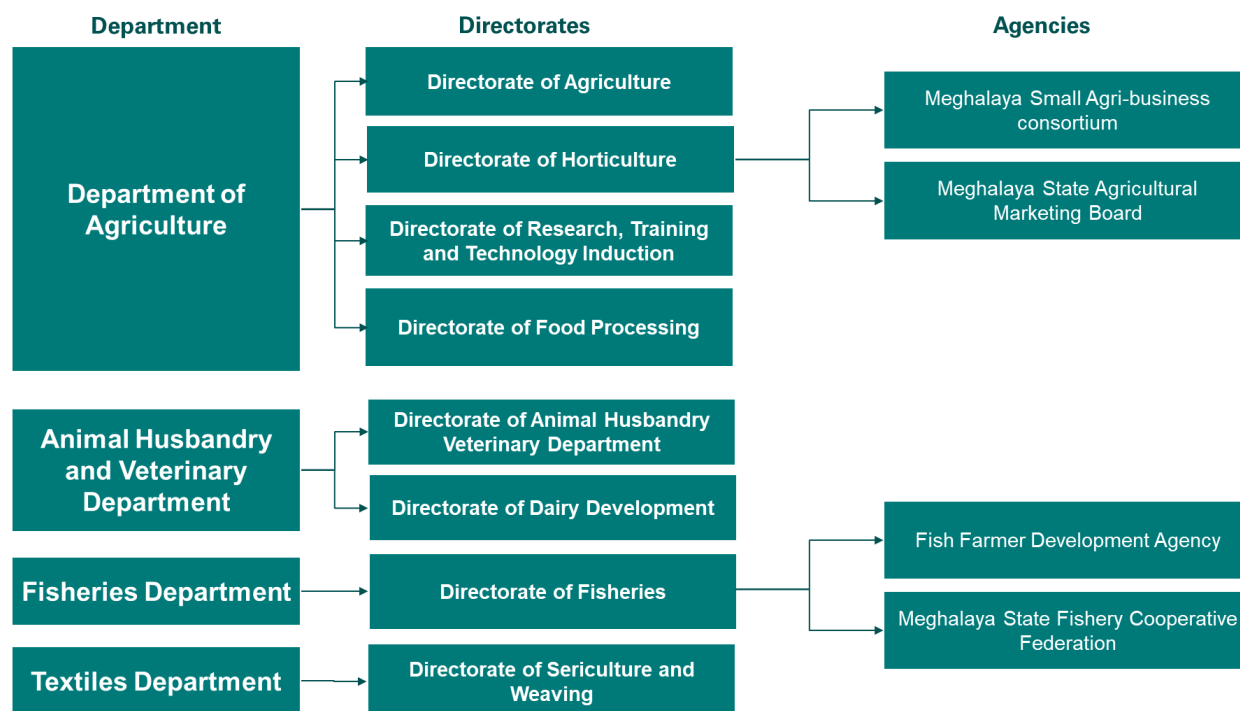


Figure 2: Organization Structure of Primary Sector Departments

The detailed functions of the departments and their directorates/ agencies has been detailed in [annexure 9.12](#)

Various stakeholders applicable to Primary Sector are as below:

### **Government:**

- Head Office Officers such as Secretaries, Joint Secretary, Directors etc.
- Zonal Officers such as Zonal Officer Weaving etc.
- District Officers such as District Agriculture Officer, District Horticulture Officer, District Handloom Officer, District Sericulture Officer, District AHVT Officer, Superintendent, Assistant Superintendent, Lower Divisional Assistant, Superintendent of Fisheries, Fishery Officer.
- Sub Divisional Officers such as Sub Divisional AHVT Officer, Fishery Officer etc.
- Block Officers such as Block Development Officer, Block Horticulture Officer, AHVO etc.

### **Business:**

- Various Vendors who do the works assignment for the departments such as preparation of sheds, green houses, pond constructors etc.
- Suppliers who supply different input materials such as seeds, seedlings, manure, machinery, livestock, Yarn , accessories (parts of looms) etc.

**Citizens:**

- Direct purchasers from the department such as citizens buying from Nurseries, Meg Outlets etc.
- Farmers which includes Fisheries Farmers, AHVT Farmers, Sericulture Farmers and Agriculture Farmers.

## 2.5 Goals of Primary Sector

There are 235 indicators defined as part of the MeghEA Vision which are public service delivery centric and intended to measure the progress of the state in-terms of citizen centric service delivery. The Goals, Targets and Indicators with baseline data and targets to be achieved can be seen at [Annexure 9.1](#)

- Indicators Assigned to Primary Sector – **19**, please follow list in section [9.1.1](#)
- Indicators under Primary Sector and assigned to departments under Primary Sector - **18**, please follow section [9.1.2](#)
- Indicators under Primary Sector but marked to departments in Other Pillars – **1**, please follow list in section [9.1.3](#)
- Indicators under Other Pillars but marked to departments under Primary Sector – **2**, please follow list in section [9.1.4](#)

In addition to above, departments in primary sector has defined some internal target to be achieved in near term. Please follow list in [section 9.1.5](#)

Below is a graphical representation of indicators under various goals that have been measured for success:

Goals	2 NO HUNGER	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	14 LIFE BELOW WATER
Number of Indicators as per Vision	15	2	2
Number of Indicators (In Scope Depts)	15	2	2
Primary Sector Departments	<ul style="list-style-type: none"> <li>• Agriculture Department</li> <li>• Animal Husbandry Department</li> </ul>	<ul style="list-style-type: none"> <li>• Agriculture Department</li> </ul>	<ul style="list-style-type: none"> <li>• Fisheries Department</li> </ul>
Other Departments	<ul style="list-style-type: none"> <li>• Food Civil Supplies &amp; Consumer Affairs</li> </ul>		

Figure 3: Primary Sector Goals, Indicators, Departments Mapping

## 2.6 Business Capability for Primary Sector

A business capability is an ability or capacity that Departments under Primary Sector possess or exchange to deliver specific services. Primary Sector takes care of all needs in Farmers life cycle.

Please refer business-architecture metamodel to understand the relationship between capabilities and services (refer [section 9.13](#)). The identified Capabilities are as below:



Figure 4: Primary Sector- Business Capability Model

A brief explanation of each of the capabilities is described below:

**Fund Management:** Capability to manage funds for different schemes under primary sector, for establishment of buildings to deliver services, for payment of salaries/ allowances and for management of infrastructure.

**Procurement:** The departments under primary sector undertake significant amount of procurement to provide various benefits to the farmers. As part of this procurement, vendor selection is carried out through competitive tendering process. Different vendors are selected for different goods and services; thus, vendor management is one of the key capabilities of the primary sector. Orders as per requirement are placed to the vendors and supplies are received from vendor. The stock is managed and stored for further distribution to the beneficiaries and payments are made to the vendors as per orders.

**Service Management:** Capability to identify the right beneficiaries and manage those beneficiaries. Capability to define the eligibility criteria for each service and ensure requests from eligible beneficiaries are smoothly processed, are key capability traits in this area. For highly matured capability, pro-active beneficiary identification is a key feature

**Distribution Management:** Capability to distribute the procured and produced inputs (Seeds, organic inputs, Funds, Machineries, Equipment, Piglets, Livestock, Worms etc.) to the right beneficiaries to support them in their farming operations.

**Market Linkages:** Capability to provide information to farmers at right time, support them to sell their produce in markets, helping in arranging logistics at affordable rates, helping in processing of their food products, storage facilities and connecting Buyers to the Farmers.

**Capacity Building:** Capability to train farmers to ensure they adopt the organic and scientific methods of farming, training on marketing of farm produce, training field officers to ensure they further train farmers, conducting awareness campaigns for farmers to become entrepreneurs and conducting exposure trips including organizing and participating in Exhibitions/ Festivals/ Expos/ Kisan Melas/ Shows for farmers doing something innovational. This capability may also include in-house department stakeholder training.

**Production Management:** Capability to manage the production of quality seeds, organic inputs, vermi compost, saplings, organic manure, livestock, silk, fish seeds and processed food etc.

**Note:** All above capabilities would be useful in defining micro-service or application service, while implementation of the system aligned to the Micro-Service based architecture/SOA principles. These capabilities are at macro-level, further analysis is required to drill down to more granular level to qualify them as micro-service.

## 3. Primary Sector - Business Architecture

### 3.1 Key Concepts, Definitions and Approach

The Business Architecture is an essential key for the design of a good Enterprise Architecture, as it looks at the business vision and the functions/ services required to fulfil that vision, but not the technologies required to be used. The key entity in Business Architecture is Service, be it citizen centric, business centric or employee centric. A successful implementation of Business Architecture requires defining Vision and Goals, Business Process Re-engineering of the services, building service portfolio, rationalize the services and above all, identification of services that are common across the Government or across groups of departments and abstracting them into a set of reusable/shared services, processes and workflows. Similar approach has been taken into Business Architecture of Primary Sector which has been defined below step by step.

#### 3.1.1 Key Concepts

- **MeghEA Meta Model:** MeghEA Meta Model describes the types of entities described in Business, Application, Data and Technology architecture domains and the relationships between them. Refer [Annexure 9.13](#) for details.
- **Government Services:** Government Service is one that is provided by a government agency to its citizens, businesses, employees or other government agencies, in any form of delivery. A service may have several components, process steps, service levels and performance metrics. A service should have ONE beneficiary (Citizen, Business, Employee or Other Government Agency) and only ONE key outcome such as:
  - Farmers ID Card, Certificate, License, Information, NOC, Approval letter, Training Videos, Technical Assistance/ Guidance, Financial Assistance in Bank Account, Lab Reports, Soil Health Card, Appointment (Digital Outcomes)
  - Classroom Training, Seeds, Saplings, Seedlings, Fertilizers, Manure, Machinery, Equipment, Livestock, Worms, Cocoons, Yarn, Fish Seeds, Artificial Insemination, Cross Breeding. (Physical Outcome)
- **Farmer's Life Cycle:** Farmer's life cycle is defined as the sequential arrangement of various stages in a crop production season, animal farming, fisheries season and textile weaving. These stages are arranged as per the order of occurrence in the season

#### 3.1.2 Key Definitions

- **Farmer:** Any person who cultivates the crops on owned land, take land on lease and cultivates the crops, cultivates crops by supervising the cultivation of land through any other person, engages in fisheries, dairying, poultry, other animal husbandry activities or allied sectors is defined as a farmer.
- **Service Domain:** Service Domain is a broader group into which services are categorized based on the outcome. E.g. all services related to distribution of planting material to farmers has been categorized as Input Distribution.
- **Service Sub Domain:** Service Sub Domain is sub categorization of the services identified in the domains based on their nature or product. E.g. under input distribution, seeds are distributed under different schemes thus marked as Seed Distribution sub domain.

- **Service Definition:** Service Definition is the process of specifying the attributes of a service in terms of its Type, Category, Class, Priority and Service Level.

### 3.1.3 Approach – Service Portfolio Finalization

One of the main objectives of Meghalaya Enterprise is to transform the services of the departments through effective assessment and holistic implementation plan. The key entity in business architecture is Service, be it citizen-facing, employee-facing or internal among departments. The critical outcome related to business architecture – Service Portfolio finalization, deriving plans to ensure services have the Citizen/Business-centricity, Service Prioritization for implementation and Integration of processes. A successful implementation of the aforesaid plan requires a fundamental re-engineering of the Business Processes, elimination of non-value-adds and above all, identification of cross-cutting services that are common across the departments.

The approach towards service portfolio finalization is current state service identification, rationalization of service, prioritization of services, re-engineering of the prioritized and plan for implementation of the re-engineered services. The approach and the steps taken to realize the objective is illustrated below:

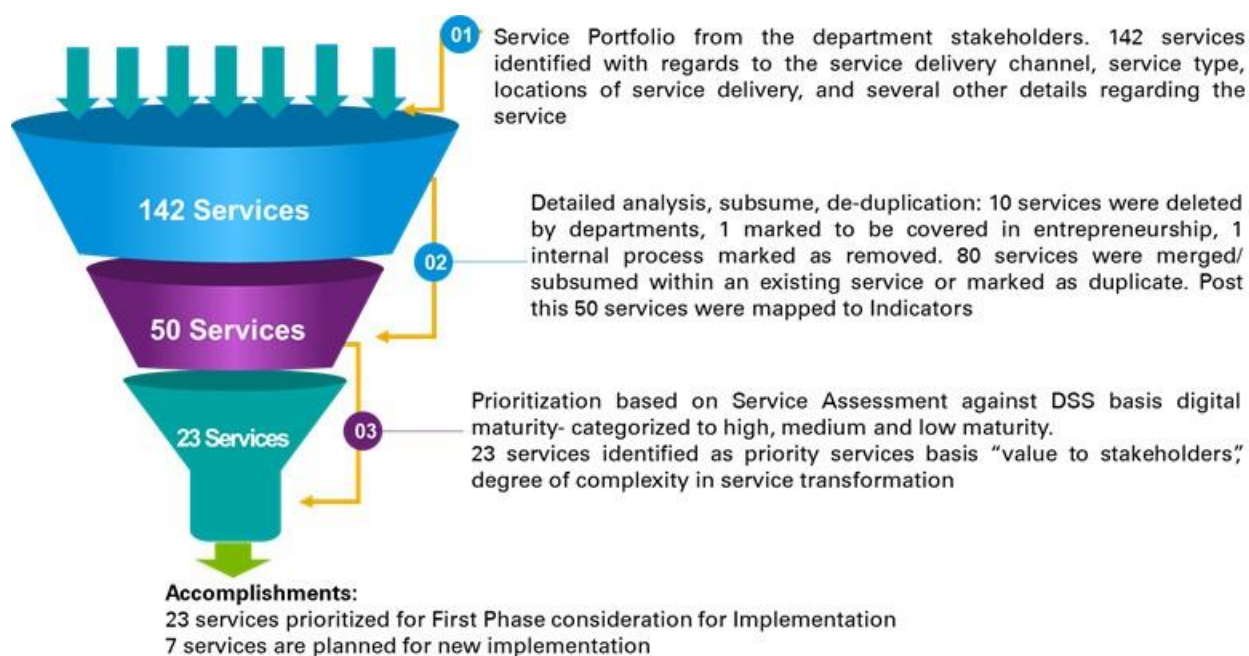


Figure 5: Service Portfolio Finalization Framework

## 3.2 Current State Assessment

### 3.2.1 Service Overview

Government Service is one that is provided by a government agency to its citizens, businesses, employees or other government agencies, in any form of delivery. A service may have several components, process steps, service levels and performance metrics

A service should have ONE beneficiary (Citizen, Business, Employee or Other Government Agency) and only ONE key outcome such as:

- ID Card, Certificate, License, Information, NOC, Approval letter (Digital Outcomes)
- Food, Education, Seeds, Fertilizers, Goods, Yarn , accessories (parts of looms) etc. (Physical Outcome)

The services of Primary Sector have been categorized in different service domains. These are illustrated below:

Agriculture & FW	AHVT	Fisheries	Textiles
Financial Assistance	Input Distribution	Financial Assistance	Financial Assistance
Informational Services	Product Selling	Input Distribution	Input Distribution
Input Distribution	Training	Product Selling	Product Selling
Product Selling	Treatment	Training	Supply Chain
Supply Chain		Supply Chain	Training
Training			

Figure 6: Service Domains of Primary Sector

- **Financial Assistance to Farmers** – The service domain focuses on providing financial assistance to the farmers for infrastructure development, establishment of aqua parks, insurance subsidy, purchasing livestock, increasing production, opening mobile fish retail units, purchasing machinery, purchase of planting material, stipends to agriculture students and creating modern hygienic fish markets etc. based on the eligibility criteria.
- **Input Distribution to Farmers** – The service domain focuses on providing inputs to farmers such as seeds, piglet, sapling, planting material, equipment, organic inputs, cross breeding, insemination etc. at subsidized rates.
- **Informational Services** – The service domain focuses on providing information services to farmers such as daily price information of commodities, information on soil health, weather alerts, crop production and recommendations so that accurate decision can be taken by the farmers at right time thus crop produce can be increased.
- **Treatment to animals** – A network of Veterinary Hospitals and Dispensaries have been established in the State for undertaking treatment of ailing animals and birds.
- **Product Selling** – The services in this domain are mainly of the nature of sales like eggs selling, Meg products selling, saplings selling, seeds, spawn, yarn, fish seeds, seedlings cut flowers selling etc.

- **Supply Chain Management** – The services in this domain deals with providing go-down, cold storage, market linkages, insulated & oxygenated vans, transportation services and community canning.
- **Training** – The services aim to provide training, certification and skill development services to various stakeholders under the primary sector such as farmers, internal staff, educated rural unemployed youth and entrepreneurs.

In addition to above, State-Wide Enterprise Architecture from State-wide Detailed Architecture Requirement document should be considered.

### 3.2.2 Current Service Portfolio

Service discovery stage is to identify and finalize the current list of services offered by departments and corresponding directorates to citizens, businesses and other stakeholders in the ecosystem under preview. Details of all services (G2C, G2G, G2B and G2E), critical to stakeholders offered by any means need to be consolidated along with underlying sub services and processes details at current stage. To help department stakeholders understand the project objectives, service definition and the need for service identification, multiple sessions were organized with each department. With the help of Planning Department, Nodal officer for each department was assigned, who helped in meeting coordination activities and follow-up for data collection. Demonstrations for entering service data and process steps in MeghEA Questionnaire Portal were also give to department officers and nodal officers. The following are the accomplishments from this exercise:

- 142 services (101 Agriculture, 11 AHVT, 15 Fisheries and 15 Textiles) identified along with detailed description of the services and process steps.
- 9 services deleted by Agriculture & Farmers Welfare department because of duplication, 2 service marked as deleted from AHVT as the service pertains to internal functioning (Leave Application) and 1 service has been marked to be covered under Entrepreneurship Pillar from Textiles Department. Post this, 130 services are marked as qualified for rationalization and assessment.
- All actors associated in the department's service delivery were identified.

Below is diagrammatical representation of the 130 qualified services of departments under Primary Sector:

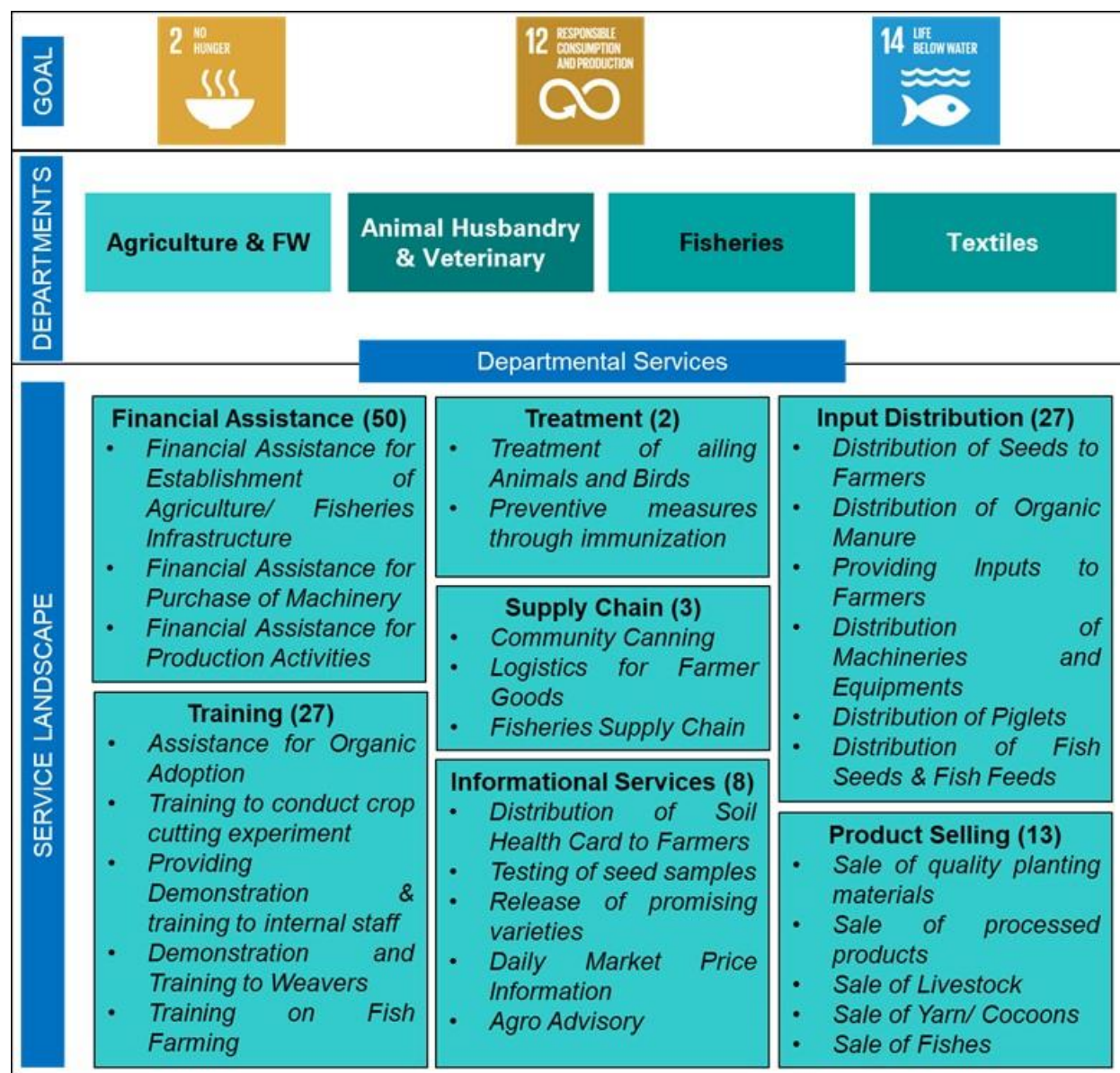


Figure 7: Primary Sector - Service Domains with As-Is Service Counts

The data entered by the department is available at [MeghEA Portal](#). Further, the Service Catalog as on 30<sup>th</sup> November 2019 is detailed in [Annexure 9.2](#).

### 3.2.3 Current State Business Interaction Matrix

The departments in Primary Sector consumes business services from other departments in State Government and provide services to other departments in State Government.

These business interactions have been captured in two different matrices, one for the business services Primary Sector departments consume from other departments and the other for the business services Primary Sector departments provide to other departments. For example, the departments take sanction and letter of approval from Finance Department for withdrawal of funds for delivering services thus marked as consumed by Primary Sector departments. The current business interaction is illustrated as below:

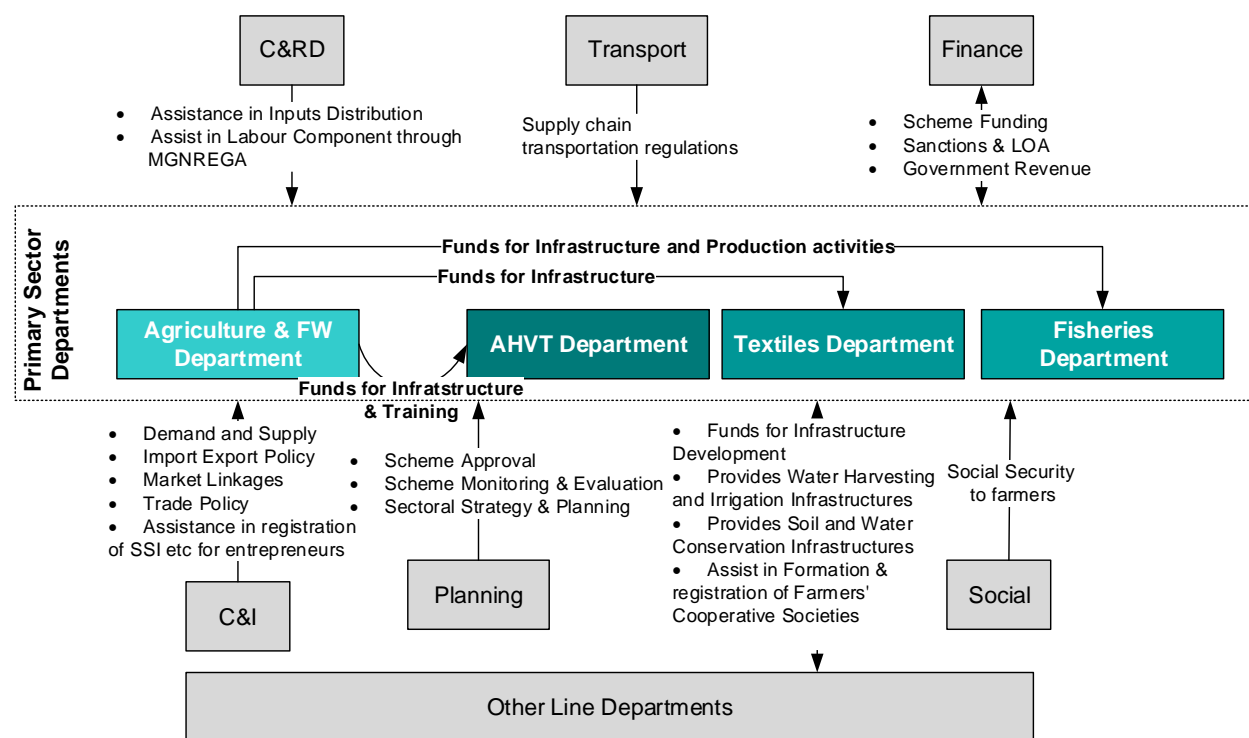


Figure 8: Current State Business Interaction Matrix

The matrices are detailed in [Annexure 9.7](#) and [9.8](#)

### 3.3 Service Delivery Challenges/ Bottleneck

The departments in Government of Meghalaya has been facing various challenges in delivering their services to the beneficiaries including citizens, farmers and businesses. The priority of the departments is to improve the service delivery experience and provide proactive services to the beneficiaries.

The key challenges identified in delivering services related to Primary Sector and their impact are as below:

Service Domain	Challenge	Impact
<b>Financial Assistance</b>	Financial Assistance to farmers is also delivered through in-kind or cash without system-based tracking	District officers waste significant time and effort in tracking these services and this introduces possibility of corruption
	Farmers needs to fill long paper-based forms or plain paper applications	Hinders ease of service application and introduces data error. This also leads to rejection of beneficiaries due to incorrect application. No standard format in case of plain paper applications.
	Eligibility criteria for financial assistance are not transparent	Ad-hoc and inconsistent decision making in beneficiary selection. This also leads to human biases
	The definition of Farmers as per Farmer's act is not exclusive and exhaustive	Difficulty in identifying intended beneficiaries and the list of supporting documents required is not specific
	Lack of awareness of services.	Beneficiaries are not aware of majority of Government services; this has been voiced in various Farmer's meet
	Lack of infrastructure and funds to build new ponds and hatcheries.	Less production of fish meat.
	Identification criteria for Stipend to beneficiaries is not clear.	Some of the eligible educated rural unemployed youth may not get the benefit.
<b>Informational Service</b>	The information is collected manually from the markets and entered into the system	Effort intensive and error prone task leads to minimized benefit
	Soil and seed samplings are done at Government level by Government Officials.	Delay and less coverage due to time and funds constraints.
<b>Input Distribution</b>	The stock is maintained manually	No stock visibility to higher officials.

Service Domain	Challenge	Impact
	Application for inputs are received irrespective of availability of stock.	Delay in delivering inputs due to long procurement procedures and funds availability.
	Different vendors for different districts resulting in different rates and different qualities.	Difficulty in maintaining vendors and auditing of bills at state level. Also, the quality of products is not consistent
	Limited supply of inputs, considering the high demand and limited fund	Scope of impact is limited to few farmers, resulting in less productivity.
	Lack of awareness on department's services	Awareness among beneficiaries is limited
	Communication through physical mode only	Delay and cost involved diminishes the service value to beneficiaries
<b>Product Selling</b>	Sales are made in cash.	Possibility of revenue leakages due to manual accounting of cash collected.
	Manual registers for stock/ products availability.	No stock visibility to higher officials.
<b>Training</b>	No pre-published schedule for trainings	Possibility of not getting training when required.
	Lack of awareness on Mechanization and Advisory services	Traditional methods of farming without knowledge of better farming techniques.
	Pre-determination of interested farmers for training is largely unavailable	The targeted trainings are largely missing
<b>Supply Chain</b>	Limited market linkage to sell produce	Intervention of middleman leading to inflated price to consumers and lower price to farmers
	Limited ponds and hatcheries	Limited production of fish for sale
	Inadequate food storage, packaging and food processing infrastructure	Wastage of food due to lack in storage and transport facilities.
<b>Treatment</b>	Irregular vaccination procedures	Risk of animal epidemics are high

Table 2: Service Domains, Challenges and Impacts

### 3.4 Service Rationalization

As part of service rationalization, services that provides similar output as per service definition, are merged together. Further, those processes part of other services are subsumed in the larger service. The services are further confirmed and validated with the nodal and department and corresponding directorate officers.

Agriculture & FW	AHVT	Fisheries	Textiles
Financial Assistance 12	Input Distribution 2	Financial Assistance 1	Financial Assistance 2
Informational Services 6	Product Selling 1	Input Distribution 1	Input Distribution 3
Input Distribution 4	Training 2	Product Selling 1	Product Selling 1
Product Selling 2	Treatment 2	Training 1	Supply Chain 1
Supply Chain 2		Supply Chain 1	Training 1
Training 4			
Services after Rationalization: 30	Services after Rationalization: 7	Services after Rationalization: 5	Services after Rationalization: 8
Services Merged: 62	Services Merged: 2	Services Merged: 10	Services Merged: 6

Figure 9: Primary Sector- Service Rationalization Numbers

#### Accomplishments:

- 80 services are merged/ rationalized from the existing list of services leaving **50** services as qualified services.

Rationalized Service Catalog can be seen at [Annexure 9.3](#)

#### 3.4.1 Service Indicator Mapping

UN has identified **17** sustainable development goals and the targets to be achieved by 2030. These identified targets have been mapped to indicators which are realistic and measurable criteria to monitor the progress of achieving targets. Meghalaya has adopted nineteen (19) indicators to measure and monitor the progress of targets linked to Primary Sector. Two (2) Indicators has been defined in Entrepreneurship Pillar which are assigned to departments under Primary Sector. The indicators have been finalized in Vision and Scope of Meghalaya Enterprise Architecture. The services provided by the contributing departments has been mapped to the indicators for achieving targets. The identification of key services mapped with listed indicator under each Strategic Pillar is based on the steps below:

- Service outcome must have a direct impact to the indicator;
- Service delivery efficiency can impact the indicator's target achievement milestones;
- Services that are inter-linked to the service that has been mapped in the above two criteria.

The detailed service to indicator mapping is provided in [Annexure 9.4](#)

Further, Mapping of Services to departments' near-term targets is provided in [Annexure 9.4.1](#)

### 3.4.2 Current State Assessment and Service Prioritization

The departments contributing to Primary Sector has many bottlenecks in service delivery. It is imperative that such service delivery challenges impact the service delivery to its citizens. As most of the services delivered by Primary Sector are in manual mode, Current state DSS assessment for the services is **Low to Medium**.

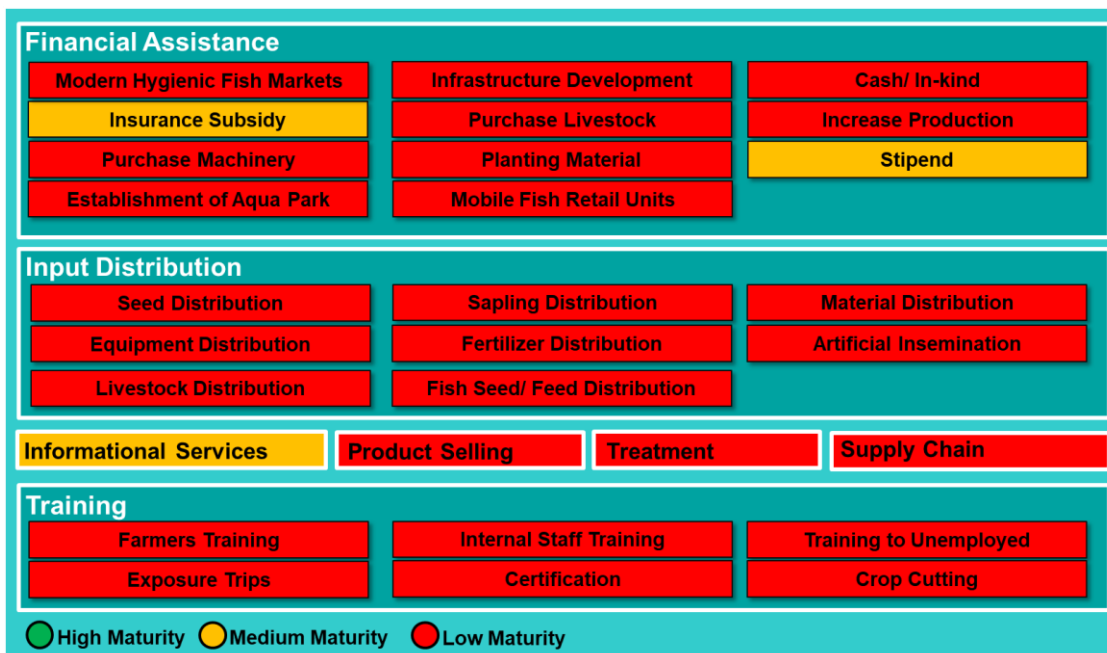


Figure 10: Primary Sector- Service Assessment

#### Summary of Current State Assessment:

- Very limited number of services are available in digital channels, this makes the assessment score to be low
- Service portfolio is not formalized, notified or documented, thus the services are marked low in several assessment dimensions
- Service BPR, ease of delivery and service facilities have not been undertaken. Only a few of the department stakeholders are aligned to the service delivery.
- Service UI and UX are primitive, service is limited to few delivery channels and hence, creates a gap in realization of intended service value. Paper trails gains traction and replaces digital services for ease of delivery

Please refer [Annexure 9.5](#) for detailed assessment result along with the level of complexity in implementation and value to stakeholders. Please note the following pointers related to complexity of implementation.

Complexity of implementation is a function of the following parameters, these parameters are not exclusive

- External stakeholder involvement in the service delivery process.
- Process-role has variability depending on the service request, the variability may arise due to various factors such as scheme funding from central government.
- No other similar implementation has been observed.

Please note the value to stakeholders have been derived from the strategic indicator mapping.

### 3.5 Farmers' Life Cycle

The Primary Sector service domains are studied and mapped to farmer's life cycle. The illustration for the same is as below:

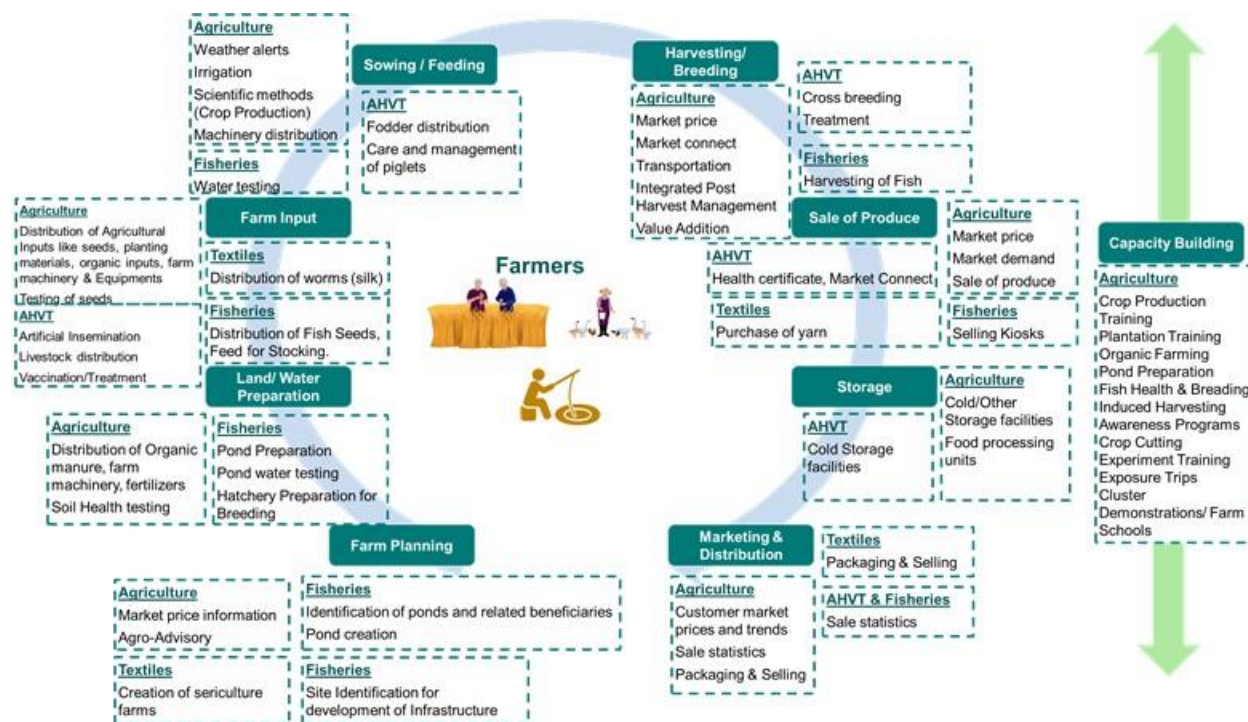


Figure 11: Farmer's Service Life Cycle

The life cycle has been prepared keeping farmers' needs during different stages in Primary Sector. These stages have been explained as below:

#### 3.5.1 Farm Planning

In this stage farmers are mostly concerned about what crops including varieties to grow, market demand, method of cultivation etc. The Agriculture department in this stage primarily provides advisory services through estimated price of crops in market, while Fisheries provides facilities in the form of finances to identify and create a pond.

**Existing Services:** Informational Services are provided along with financial assistance and inputs for preparation of farm/ creation of ponds/ creation of sericulture farms/ worms distribution etc.

**Missing Services:** Testing labs for getting information on quality of seeds/ soil/ water quality for ponds etc.

Services	Indicators
1. Financial Assistance for Establishment of Infrastructure	1. Farmers with surplus production to sell in the open market.
2. Financial Assistance for Purchase of Machinery	2. Percentage growth in average income of small-scale food producers, by sex and indigenous status.
	3. Growth (percentage) in gross Agriculture expenditure Y-o-Y.

Services	Indicators
3. Daily Market Price Information	4. Percentage of growth of export subsidy to agriculture exports.
4. Information Services	5. Gross Global Food Loss Index (GFLI) in metric tons
5. Agro Advisory	6. Increase net cropping intensity (Cropping intensity refers to raising of a number of crops from the same field during one agricultural year; it can be expressed through a formula. $\text{Cropping Intensity} = \text{Gross Cropped Area} / \text{Net Sown Area} \times 100$ )

### 3.5.2 Land/Water Preparation:

In this stage farmers are mostly concerned about preparation of the farmland or pond or both for sowing of seeds, silk worm rearing, fish rearing and animal rearing.

**Existing Services:** The Agriculture department in this provides recommendations post testing of soil through soil Health Cards. Fisheries provides fish seeds to the pond owners.

**Missing Services:** Pond water testing for identifying water quality and parasites.

Services	Indicators
1. Financial Assistance for Establishment of Water Infrastructure	1. Farmers with surplus production to sell in the open market.
2. Soil Health Testing	2. Percentage growth in average income of small-scale food producers, by sex and indigenous status.
3. Land development through farm machineries.	3. Growth (percentage) in gross Agriculture expenditure Y-o-Y.
4. Informational Services	4. Percentage of growth of export subsidy to agriculture exports.
	5. Gross Global Food Loss Index (GFLI) in metric tons.

### 3.5.3 Farm Input

This is a major stage where the inputs are provided to farmers in form of seeds, organic inputs, machinery etc. to prepare their farms and plant crops. The inputs are requested by farmers based on their needs. Agriculture farmer requests for seeds, seedlings, spawns, bio-fertilizers, bio pesticides, organic manures, machineries, etc. whereas AHVT farmer requests for livestock. In similar way, fisheries farmer requests for fish feed, fishing equipments and seeds to be placed in the pond. Textile farmers needs silk worm seeds and Yarn as Inputs.

**Existing Services:** Inputs Distribution (including seeds, saplings, spawns, bio-fertilizers, saplings, bio-pesticides, organic manure, livestock, worms(silk), fish seeds, etc.), Machinery & Equipment Distribution are some of the existing services in farm inputs.

Services	Indicators
1. Distribution of Agriculture inputs (seeds/planting materials, other organic inputs etc.) at subsidized rate to Farmers	1. Farmers with surplus production to sell in the open market.
2. Distribution of Machineries and Equipments	2. Rice, wheat and coarse cereals produced annually per unit area (kg/Ha).
	3. Percentage growth in average income of small-scale food producers, by sex and indigenous status.
	4. Increase net cropping intensity (Cropping intensity refers to raising of a number of crops from the same field during one

Services	Indicators
3. Distribution of piglets and Livestock	agricultural year; it can be expressed through a formula. Cropping Intensity = Gross Cropped Area / Net Sown Area x 100).
4. Artificial Insemination	
5. Vaccination/ Treatment	5. Increase in Agriculture orientation index.
6. Seed Testing	6. Growth (percentage) in gross Agriculture expenditure Y-o-Y.
7. Distribution of Fish Seeds	7. Ratio of chemical fertilizers sold to ratio of crop production.
	8. Per capita meat production.
	9. Per-capita milk yield per milk animal.

### 3.5.4 Sowing/Feeding

In this stage the major part activity is restricted to sowing of seeds, providing required water, assistance in scientific methods of cultivation. Fisheries and AHVT provides feeding to animals or fishes.

**Existing Services:** Financial Assistance for creation of Water Infrastructure through Water resources department, Capacity Building, Treatment facilities etc.

**Missing Services:** Proactive weather alerts to farmers can be introduced to help farmers. Further, digital learning content with self-learning videos can be introduced to enhance capability.

Services	Indicators
1. Fodder Distribution	1. Farmers with surplus production to sell in the open market.
2. Care and Management of Piglets	2. Percentage growth in average income of small-scale food producers, by sex and indigenous status.
3. Water Testing	3. Increase in Agriculture orientation index
4. Weather Alerts	4. Rice, wheat and coarse cereals produced annually per unit area (kg/Ha).
5. Irrigation Infrastructure	5. Increase net cropping intensity (Cropping intensity refers to raising of a number of crops from the same field during one agricultural year; it can be expressed through a formula. Cropping Intensity = Gross Cropped Area / Net Sown Area x 100).
6. Training on Scientific Methods of Farming	6. Growth (percentage) in gross Agriculture expenditure Y-o-Y.
7. Distribution of Equipment (for Plant Health management) at subsidized rates.	7. Ratio of chemical fertilizers sold to ratio of crop production
8. Fish Feed Distribution	8. Percentage increase in total production of fodder in the state.

### 3.5.5 Harvesting/Breeding

This stage is categorized to harvesting the crops, providing transportation to ripped crops from farm to storages and provide information related to market price and prospective buyers. AHVT provides breeding facilities to grown and reared animals. Fisheries provides assistance/facilities on harvesting of Fish. The textiles farmers harvest cocoons in this stage.

**Existing Services:** Crop cutting trainings to staff, transportation facilities, assistance in artificial insemination, cross breeding, vaccination of animals are some of the existing services.

**Missing Services:** Certification of the animal farms and Identification of Animals for Traceability can be introduced.

Services	Indicators
1. Cross Breeding Service	1. Per-capita milk yield per milk animal.
2. Treatment Services	2. Per capita meat production.
3. Market Price Information	3. Farmers with surplus production to sell in the open market.
4. Market Connect	4. Gross Global Food Loss Index (GFLI) in metric tons
5. Transportation Support	

### 3.5.6 Sale of Produce

This stage is about selling goods to wholesale buyers. AHVT provides health certificates to animals sold for meat, fisheries however provide financial assistance to sell in fish kiosks. Agriculture provides information on market price, market demand and sale of produce in farm outlets and sale counters.

Existing Services: Market connect, Informational Services, Financial assistance for Creation of Selling Infrastructure, Purchase of Yarn, Transportation services are the existing services in this area.

Missing Services: Minimum Prices fixation policy can be introduced for price support to farmers.

Services	Indicators
1. Market Connect	1. Farmers with surplus production to sell in the open market.
2. Purchase of Yarn from Farmers	2. Gross Global Food Loss Index (GFLI) in metric tons.
3. Market Price Information	3. Per capita meat production.
4. Market Demands	4. Percentage growth in average income of small-scale food producers, by sex and indigenous status.
5. Selling Kiosks	

### 3.5.7 Storage:

This stage is about storing agriculture produce in proper storage facilities. Agriculture provide go-down and cold storage facilities to farmers and distributors to store farm products.

Existing Services: Community Canning, go-downs and cold storages are provided as existing services by the departments.

Missing Services: Financial assistance for creation of storage facilities for SHG can be introduced to localize the storages and help local communities.

Services	Indicators
1. Go-down and Cold Storage Facilities	1. Percentage growth in average income of small-scale food producers, by sex and indigenous status.
2. Food Processing Units	2. Growth (percentage) in gross Agriculture expenditure Y-o-Y.
3. Textile Units	3. Percentage of growth of export subsidy to agriculture exports.

### 3.5.8 Marketing and Distribution:

This stage is about final distribution of goods to consumers. Agriculture collects price and sales statistics from different markets and help farmers in decision making. AHVT and fisheries also collect price information. Textile department provides market support to sericulture farmers for cocoons and support to weavers for fabrics.

**Existing Services:** The services include Informational Services related to daily prices of different markets, purchasing produce for processing and selling under the name of Meg Products through Meg Outlets.

**Missing Services:** Sale Statistics in Agriculture and Distribution supply chain can be introduced locally to procure and distribute across the state and also export the local goods. Marketing and Distribution can be introduced for AHVT, Fisheries and Textiles as well.

Services	Indicators
1. Customer Market Price & Trends	1. Percentage growth in average income of small-scale food producers, by sex and indigenous status.
2. Sale Statistics	2. Growth (percentage) in gross Agriculture expenditure Y-o-Y.
3. Packaging & Selling Support	3. Percentage of growth of export subsidy to agriculture exports.
4. Logistics Support	

### 3.5.9 Capacity Building

Training plays a major role in farmers life. The departments provide training to farmers and officials on newly evolved/improved technologies, plant and soil health/ integrated pests & diseases management, awareness of livestock/ poultry diseases, pond preparation and management, fish culture, fish health, induced breeding, fish harvesting, post-harvest/ value addition, awareness of zoonotic diseases, good animal husbandry practices, scientific and hygienic livestock/poultry production and management, organic farming, training to sericulture farmers, handloom weavers, farm mechanization etc. prior to and during cultivation. The officers are also provided training in specific fields like crop cutting. For innovative farmers, exposure trips are organized by the department. Department also conducts festivals, workshops, exhibitions, Kisan melas, expos for awareness and to encourage farmers and entrepreneurs.

**Existing Services:** Capacity building of farmers for Agri and Horti crops, livestock/ poultry diseases - their economic impact and preventive measures, good animal husbandry practices, scientific livestock / poultry production and management, various scientific methods of farming including machineries, crop harvesting, worm raising, manure production are provided to farmers. This includes services for fish rearing in the ponds as well.

**Missing Services:** Self learning videos and training to be introduced to enhance capability.

Services	Indicators
1. Crop Production Training	1. Farmers with surplus production to sell in the open market.
2. Organic Farming Training Programs	2. Rice, wheat and coarse cereals produced annually per unit area (kg/Ha).
3. Awareness Programs	3. Percentage growth in average income of small-scale food producers, by sex and indigenous status.
4. Crop Cutting Training	4. Growth (percentage) in gross Agriculture expenditure Y-o-Y.
5. Exposure Trips	5. Ratio of chemical fertilizers sold to ratio of crop production.
6. Demonstrations	6. Per-capita milk yield per milk animal.
7. Training on Fish rearing and Breeding through induced breeding and nurseries of hatchling	7. Per capita meat production.
	8. Per capita egg production.

### 3.6 SWOT Analysis of Business Architecture

Analysis Paradigm	Key Pointers	Target State
Strength	Availability of Nurseries, Processing Units and Government farms for seed/ silk/ sapling production and selling.	Retained
	Availability of Government Farms for supply of Livestock.	Retained
Weakness	Redundant process steps involving actors with no value addition to the service delivery process.	Eliminated
	Paper based Application for Service request.	Eliminated
	Collection of market price information in paper form and manual data entry at head office level.	Eliminated
	Lack of funds to implement schemes.	Partially Eliminated
	Lack of efficient processing value chain.	Eliminated
	Lack of transparent eligibility criteria for availing schemes.	Eliminated
	Lack of knowledge on Scientific methods of farming among farmers.	Partially Eliminated
Opportunity	Adoption of standardized process in complex service processes such as in case of AFW.01, AFW.02, AFW.06, AFW.07, AFW.21, AFW.13, etc.	Realized
	Unification and standardization of processes.	Realized
	Digitization of workflow to enable lean and fast service delivery.	Realized
	Favorable Climate for large variety of high value agriculture crops.	Realized
	Lean process flows for digitized services (e.g. AFW.01, AFW.02, AFW.06, AFW.07, AFW.21, AFW.13, etc.)	Partially realized
	Tracking of Stock of different items under different Schemes and stock requirement predictions.	Partially realized
	Efficient Tracking of Scheme Funds and utilization.	Realized
Threats	Inability to monitor current scheme funds and utilization	Addressed
	Inability to monitor real-time information on beneficiaries, stocks etc.	Addressed
	Security lapses owing to dispersed and different security authentication for system-based service delivery.	Addressed
	Inability to obtain funds from Gol owing to lack of UC submission.	Addressed

Table 3: Business Architecture SWOT Analysis

## 3.7 Future State Service Portfolio

The services prioritized based on current state assessment, implementation complexity and value to stakeholder are considered for conversion to digital services first. New services, which are not currently offered by the departments in Primary Sector, are proposed to be delivered to beneficiaries by the departments. The services need to be deliberated and eligibility need to be defined by the departments. The rationalized services (Prioritized and Non-Prioritized) along with new services constitutes Future State Service Catalogue ([Annexure 9.6](#)). Further, these services are listed department wise according to service domains which can be seen on below links:

[Agriculture & Farmers Welfare Department](#)

[Animal Husbandry & Veterinary Department](#)

[Fisheries Department](#)

[Textiles Department](#)

### 3.7.1 Service-Stakeholder Matrix

Primary Sector services involve several stakeholders. Various external entities have a role to play in the service delivery process. Below is a snapshot of the service – stakeholder matrix. This matrix details out a high-level view of the services, to understand, the various key entities involved in the services delivery, please refer [Annexure 9.9](#) for Service-Stakeholder matrix

- **Approval/ Rejection:** The responsible department receives the service request, conducts internal checks and controls and further decides to approve/ reject the service request.
- **Apply for Service:** The citizen/ student/ farmer applies for the service to get the benefit/ desired outcome.
- **Audit:** The responsible department has the responsibility to do a systematic and independent examination of the information/ documents provided
- **Funding:** The agency providing the financial support for implementation of various schemes.
- **Transfer of Funds:** The agency processes service request to transfer money.
- **Sale:** The agency responsible for sale of produce, livestock or product.
- **Procure and Distribute:** The agency responsible to float tender, choose vendor, place order and get stock and finally distribute to the applicants.
- **Provide Training:** The agency responsible to provide training to the farmers, employees or applicant.
- **Approval of Proposal:** The agency responsible for providing approval on the proposal of scheme submitted to the department.
- **Issuance of Sanction, LOA and Funds:** Agency responsible to issue sanction as per the approved proposal and issuance of Letter of Approval for withdrawal of Funds for implementation of scheme.

#### Stakeholders, their Roles & Responsibilities:

Farmers, Citizens and students apply for various service to Departments of Primary Sector. Agriculture, AHVT, Fisheries and Textiles Departments majorly plays the role of approver for these services.

Stakeholder	Brief about roles & responsibilities
<b>Planning Department</b>	<ul style="list-style-type: none"> <li>Vetting of Proposals submitted by the departments.</li> <li>Approval on proposal for implementation of schemes in the state.</li> </ul>
<b>Government of India (Central Ministries)</b>	<ul style="list-style-type: none"> <li>Provide funds based on Annual Action Plan proposed for implementation of scheme in State.</li> <li>Keep checks on the utilization of funds and benefits being delivered to the beneficiaries through implemented schemes.</li> </ul>
<b>Finance Department</b>	<ul style="list-style-type: none"> <li>Provide Sanction for the funds required for different services based on budget.</li> <li>Provide Letter of Allotment (LoA) for withdrawal of funds by departments for implementation of schemes.</li> <li>Provide funds for State Plan Schemes and State Share for Centrally Sponsored Schemes (CSS).</li> </ul>
<b>Citizen/ Farmer/ Student</b>	<ul style="list-style-type: none"> <li>Apply to avail service to get the benefits he is entitled to.</li> <li>Get the benefits as Inputs (Materials, Seeds, Pesticides, Manure etc.), Cash (In-kind, Scholarship, Stipend etc.), Machinery, Livestock, Equipments, Training, Awareness or Information etc.</li> </ul>
<b>Agriculture &amp; FW/ AHVT/ Fisheries/ Textiles Department</b>	<ul style="list-style-type: none"> <li>Approves/ Rejects the service application based on eligibility criteria.</li> <li>Procure the stock of inputs to be sold/ distributed.</li> <li>Production of planting materials etc.</li> <li>Provide infrastructure to support farmers.</li> <li>Transfer funds to beneficiaries/ line departments.</li> </ul>
<b>Line Department (Water Resources Department, Soil &amp; Water Conservation Department, Cooperation Department)</b>	<ul style="list-style-type: none"> <li>Receives funds from departments for creation of Infrastructure related to Primary sector including dams, water reservoir.</li> <li>Creation of storage facilities, mobile kiosks etc.</li> <li>Soil and Water conservation</li> </ul>
<b>AG/ CAG</b>	<ul style="list-style-type: none"> <li>Audit of the funds provided for implementation of schemes and services.</li> <li>Management of Audit Paras and ensuring compliance in usage of funds.</li> </ul>

Table 4: Stakeholder – Role Matrix

### 3.7.2 Future State Business Interaction Matrix

The departments in Primary Sector consumes business services from other departments in State Government and provide services to other departments in State Government.

These business interactions have been captured in [Section 3.2.3](#). As the objective is to provide One Government experience to citizens, thus the departments are grouped together based on sectors to

form pillars. The interactions in future state between the pillars are captured in below diagram for better illustration:

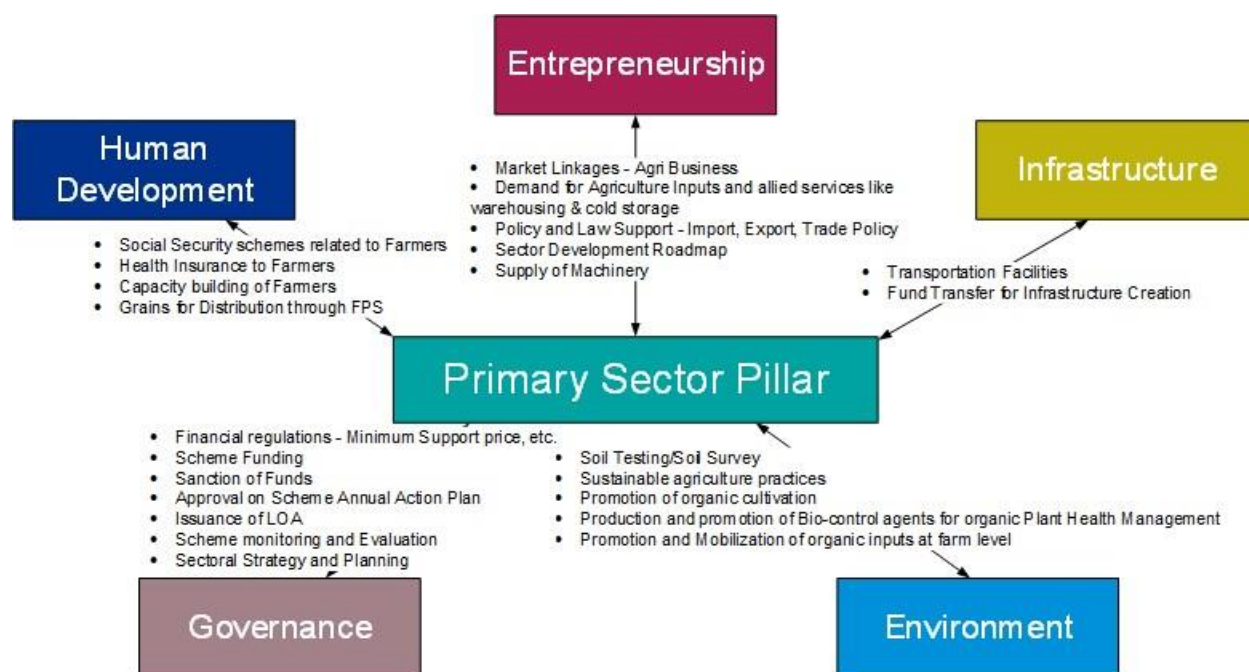


Figure 12: Future State Business Interaction between Pillars

The detailed matrix is placed at [Annexure 9.10](#)

## 3.8 Business Transformation Requirements

The primary sector is the most important sector of Meghalaya's economy, in terms of not only its role in providing food security, but also in terms of the percentage of population that depends on it. However, the primary sector has challenges in terms of timely availability of funds as majority of the agricultural programmes are time bound and season bound as well challenges for focusing on post-harvest management and value addition, lack of quality inputs, absence of scientific knowledge and timely information for conducting farm operations, lack of insurance facilities and poor infrastructure for transportation and storage.

Against this background it is necessary to bring about transformational changes in the Primary Sector to make a significant impact on the population of Meghalaya and improve economy of the state as well as farmers. This transformation should be considered as joint responsibility by the state and the development agency by introducing various reforms addressing the challenges discussed above and in [Section 3.3](#). Variety of Game Changers should be introduced along with Process Re-engineering, as described below, but not limited to the same.

### 3.8.1 Game Changers

Game Changers make a qualitative difference the way services are delivered and/ or introduce new technologies or processes for enhancing the outcomes significantly. The Game Changers proposed for Primary Sector are as below:

- **Ask Megha:** Ask Megha is a chatbot to ease service application through interactive exchange on information with the citizen/ farmers. The chatbot would be further supported by IVRS based system with both machine and human based interaction for service resolution and application.

**Case Study:** VANI (Virtual Assistant for NIC) has been successfully implemented for iKhedut Portal by Agriculture, Farmers Welfare & Co-operation Department, Government of Gujarat.

- **Integrated Labs:** Introduce three tier lab structure to cater various problems related to pests, crops, seeds, less produce, disease diagnosis (in animals and fish), soil testing, water testing etc. The three tiers are proposed as below:
  - State Level Center of Excellence Lab
  - District Level Integration Lab
  - Block Level Primary Labs

Below is illustrative representation for better understanding of the above:

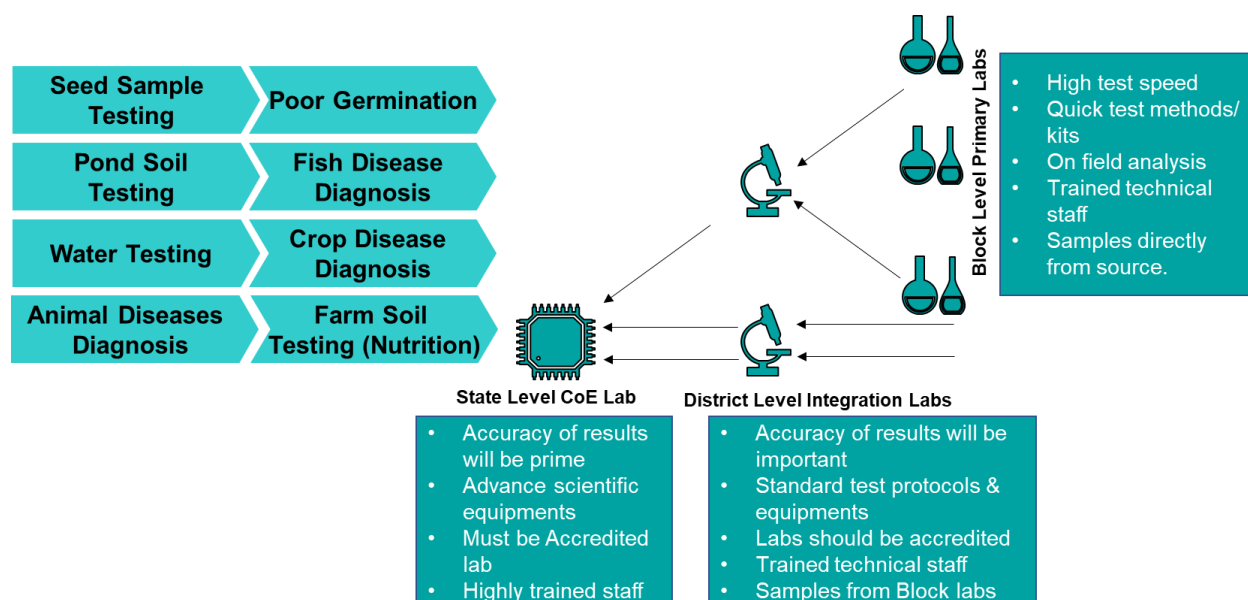


Figure 13: Three Tier Integrated Labs Structure

**Case Study:** Agriculture & Cooperation (AGRI.III) Department, Government of Andhra Pradesh has accorded permission for establishment of Dr.YSR Agri Labs at Constituency Level (147), District Level (13) and Regional Coding Centers (4) at Visakapatnam, Eluru, Guntur and Tirupati, in the State of Andhra Pradesh to supply quality Agri inputs viz., seeds, fertilizers & pesticides, to the farmers. Operational guidelines have been issued for Integration of Existing District Labs with Integrated Agri Labs, Structure, Roles, Responsibilities of Staff, Use of Unified Digital Platform in sampling, Tests to be carried out at labs, Center of Excellence, Training, adoption of Lab HR Policy and establishment of Legal Cell at Commissionerate.

The following tests shall be carried out in Dr.YSR Agri Labs:

- ✓ Seed Testing: Physical Purity, Moisture and Germination Tests.
- ✓ Fertilizer Testing: Availability of Nitrogen, Phosphorus & Potash, Boron and Sulphur.
- ✓ Pesticide Testing: Shall act as Collection point and sample will be sent to the District Lab and results will be communicated to the Farmers.
- ✓ Quality Assurance of Agricultural Inputs including:
  - Pre-approval Certification Programme
  - Post-release monitoring system
  - Farmer Samples Testing
- ✓ Random sampling – Unified Digital Platform-Automation
- **Digital Facilitation Centre (DFC):** DFC would act as a ONE-STOP shop for delivery of all services with physical outcome to the farmers and citizens. DFC would be enabled by Biometric devices to auto-register citizens basis of biometric identification.

**Case Study:** Punjab has established 515 Sewa Kendras (Digital Facilitation Centers) in the state. These Kendras are divided into 3 categories, i.e. Type-I, Type-II and Type-III. Type-I centers are established in all District Administration Complex with appropriate number of

counters (Average 12) whereas Type-II Kendras are the ones in Urban areas having 5 counters. Type-III Kendras are established in Villages or Rural areas with 3 counters. These Sewa Kendras help citizens to apply services spanning to various departments. The citizen submits his application and collects acknowledgement from the operator at Sewa Kendra counter. The applicant is informed at each and every step through SMS. Once the service is ready to be delivered (after approval), an SMS is triggered to the applicant to collect the applied service outcome. There is a small facilitation charge collected by the Service Operator for providing service to the citizen.

- **Precision & Decision Based Agriculture:** Mechanical devices planted in the farms would capture the soil information, water requirement and fertilizer requirement in regular intervals. Satellite based systems would provide the precise weather forecast. Farmers would be provided with decision advisory on what to add to the crop. For Textile Farmers, information on scheduling for Hoeing, Pruning and manuring of plantations would be provided.

**Case Study:** Precision and Decision based agriculture was taken up by Government of Andhra Pradesh. Government signed MOU with Microsoft for implementing the same on Pilot basis.

- **RFID Sensor based tracking for Food Security:** After crops are harvested or animal sold for meat, RFID sensors can be used to track food from the field to the store. The end consumer, or the citizen, will be able to follow a detailed trail about the food they consume from the farm it came to the location where it was purchased.

**Case Study:** RFID based solutions has been adopted by US for tracking the supply chain from source until in the hands of consumers.

- **Introducing modern SCM tools:** An efficient Supply Chain Management (SCM) is critical to both the departments in supplying the inputs like seeds, fish seeds, fertilizers, planting material, manure and semen for artificial insemination but also to the farmers in transporting their produce in the most cost-effective and time-effective manner to the nearest market. Effective information techniques through tool need to be implemented for disseminating information on the quality seeds, planting materials, manures, pesticides in the nearest market along with tentative price.

**Case Study:** US General Service Administration has adopted Supply Chain Management tools for effective and efficient Supply Chain.

- **E-Learning:** Self learning videos for the farmers (Agri, Horti, Fisheries, AHVT, Sericulture and Weaving) and agriculture/ veterinary students to be recorded and hosted through **Learning Management System** through Mobile Apps and State Portal.

**Case Study:** Learning Management System has been adopted by more than 60 departments in India including Lal Bahadur Shastri National Academy of Administration (LBSNAA), National Academy of Indian Railways (NAIR), Institute of Secretariat Training and Management (ISTM), National Crime Records Bureau (NCRB) etc. There are more than 1785 e-Courses available with more than 15 Lakh registered learners.

### 3.8.2 Game Changers – Strategic Indicator Mapping

The game changes defined above would help Government of Meghalaya in the following ways:

Game Changer	Strategic Indicator What to achieve?	Capability Increment How to achieve?
<b>Ask Megha – Chatbot</b>	Rice, wheat and coarse cereals produced annually per unit area	<ul style="list-style-type: none"> <li>Service Application Management</li> </ul>
	Farmers with surplus production to sell in the open market	
	Increase in Agriculture orientation index	
<b>Integrated Labs</b>	<ul style="list-style-type: none"> <li>Distribution of soil health cards to 100% farmers by 2019</li> <li>Farmers with surplus production to sell in the open market</li> <li>Percentage growth in average income of small-scale food producers, by sex and indigenous status</li> <li>Per-capita milk yield per milk animal.</li> <li>Per capita meat production.</li> <li>Per capita egg production.</li> </ul>	<ul style="list-style-type: none"> <li>Information Services</li> </ul>
<b>Digital Facilitation Centre (DFC)</b>	Distribution of soil health cards to 100% farmers by 2019	<ul style="list-style-type: none"> <li>Beneficiary Identification</li> <li>Information Services</li> <li>Market Connect</li> <li>Sale Assistance</li> <li>Distribution</li> <li>Capacity Building</li> </ul>
	Farmers with surplus production to sell in the open market	
	Percentage growth in average income of small-scale food producers, by sex and indigenous status	
<b>Precision &amp; Decision Based Agriculture:</b>	Increase net cropping intensity	<ul style="list-style-type: none"> <li>Information Services</li> <li>Distribution</li> <li>Market Connect</li> <li>Sale Assistance</li> <li>Capacity Building</li> </ul>
	Rice, wheat and coarse cereals produced annually per unit area (kg/Ha)	
<b>RFID Sensor based tracking for Food Security</b>	<ul style="list-style-type: none"> <li>No direct linkage to existing indicators</li> </ul>	<ul style="list-style-type: none"> <li>Food Processing</li> <li>Capacity Building</li> <li>Storage Management</li> </ul>
<b>Introducing modern SCM tools</b>	<ul style="list-style-type: none"> <li>Per-capita milk yield per milk animal.</li> <li>Per capita meat production.</li> <li>Per capita egg production.</li> </ul>	<ul style="list-style-type: none"> <li>Information Services</li> <li>Distribution</li> <li>Market Connect</li> </ul>
<b>E-Learning</b>	<ul style="list-style-type: none"> <li>Connected to multiple indicators</li> </ul>	<ul style="list-style-type: none"> <li>Information Services</li> <li>Capacity Building</li> </ul>

Table 5: Game Changers – Strategic Indicator Mapping

### 3.8.3 Regulatory Changes:

The changes as per redefined processes for the services need to be carried out in the respective acts and rules of the departments. The identified Acts for regulatory changes are listed below:

### **Changes in definition of a “Farmer”**

#### **Farmer’s Commission Act**

- As per the act, a farmer could be any person cultivating crops by cultivating the land by himself or by supervision. There is a need to add the provision of land holding to qualify a farmer as a registered farmer. This land holding could be a rented farmland or ownership, unless the farming product does not require a land.
- The list of farming products which does not require a land needs to be clearly specified.
- The need to register a Farmer through digital channel for availing Government services. The requirement of registration MUST be optional not mandatory.

### **Changes in Service delivery channels**

- Requirement of new Government order specifying the introduction of new (digital) service delivery channel for delivery of services.
- Government order specifying introduction of new services with associated details about the services.

### **Changes in Service delivery process**

#### **State Agricultural Produce Marketing Act**

- The act specifies the control of the Marketing board limited to regulation of prices in a specified process *“The State Government may, after consultation with the District Council concerned, by notification, declare its intention of regulating the purchase, sale, or storage of such agricultural produce in such areas as may be specified and such notification shall be published in the manner prescribed”*. The provision to add regulations of market prices through effective monitoring of real-time data without the intervention of district council must be considered.

#### **Meghalaya Grant-in-aid to Private Fish Farmers and Pisciculture Societies Rules, 1986**

- The act specifies that Financial assistance would be granted in the form of cash, with the revised workflow, the mode of delivery of financial benefits would change to direct benefit to farmer’s bank account.
- The application form details provided in the act would be revised and the list of supporting documents mentioned in the act would be minimized as per architecture requirement of the service.

#### **New Government Orders**

- Post BPR, all service and modified process steps (G2C services only) needs to be notified before implementation.

### **Changes in Service Delivery Actors**

#### **Farmer’s Commission Act**

- As per the act, the role of the Farmer’s commission is limited to monitoring of few specified services. The role needs to be extended to monitoring of the service delivery mechanism, its effectiveness and grievance redressal. MeghEA M&E based dashboard would facilitate such monitoring.

### Meghalaya Grant-in-aid to Private Fish Farmers and Pisciculture Societies Rules, 1986

- The actors specified in the act such as block development officers, Deputy Commissioner and other such actors not specified in the future state process flow would be eliminated from the act.

### New Government Orders

Post BPR, all service and actors' roles (G2C services only) needs to be notified before implementation.

Thus, the capabilities will be enhanced as stated in below diagram:

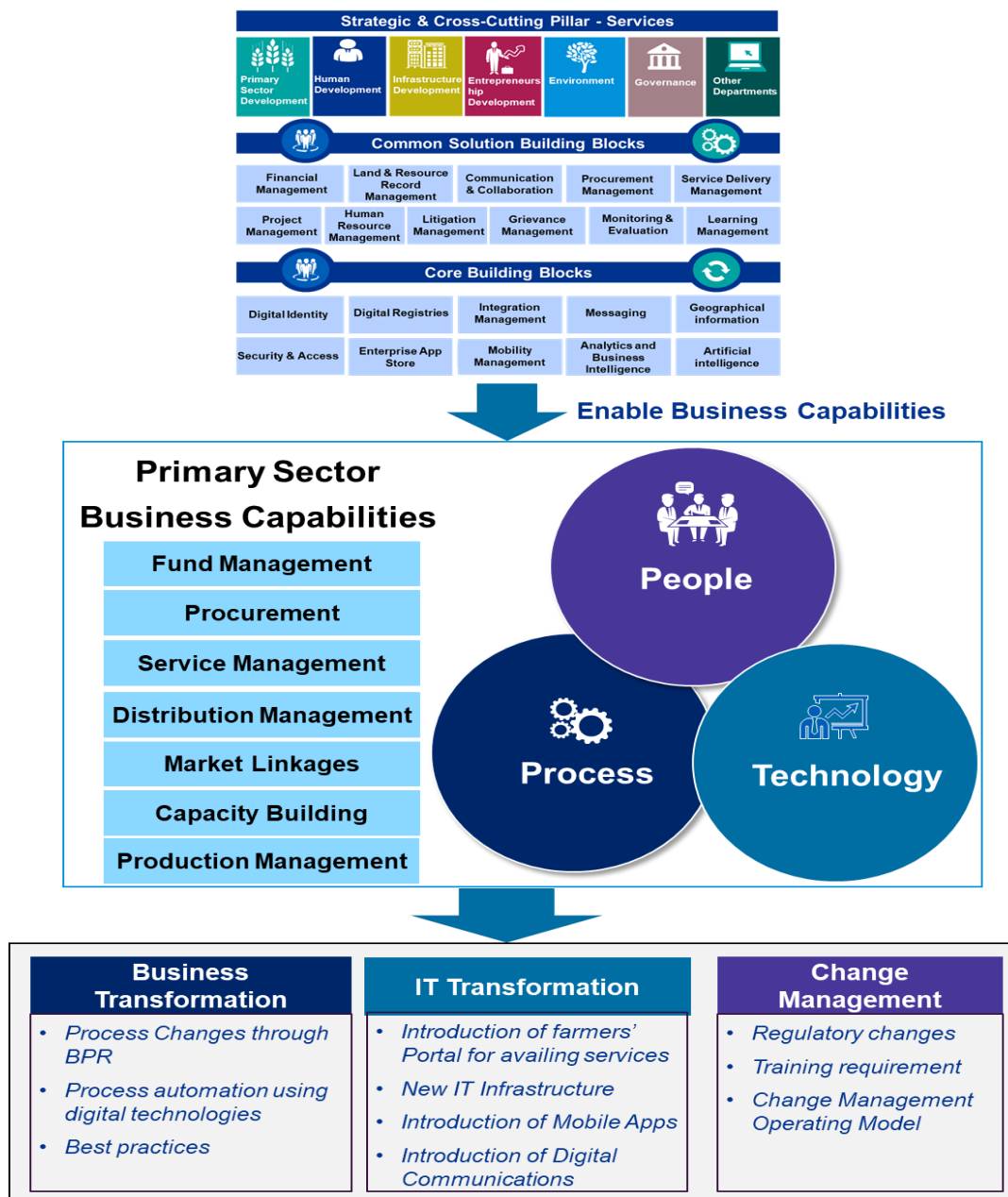


Figure 14: Business Capability to Transformation Linkage

### 3.8.4 BPR Opportunities Identification

No e-Governance initiative will produce desired impact unless it is accompanied by Business Process Re-engineering. The areas for process reengineering have been identified to simplify and eliminate the processes not adding value to the flow and integrate the service delivery. Process re-engineering and form re-engineering must be carried out at the time of implementation.

The BPR enablers are as follows:

- **The service list for BPR:**

Please follow the list of services that needs process re-engineering in section [9.5](#)

- **The As-Is process steps**

Please follow annexure on as-is process steps for the services as provided by department stakeholders in [MeghEA Portal](#)

- **The Use Cases for Services:**

The architecture use cases for prioritized service is detailed in section [8.2](#), these use cases would form the basis of system and process design.

- **The System flow illustration**

The implementation of services would need a specific system flow, this is detailed in section [8.3](#). Please follow the section for details on how to design the system basis of high-level process flow.

#### How to execute BPR

The areas identified are elaborated as below:

- **System Redesign in Farmer Centric Way:** The services related to farmer's life cycle should be made online through a single portal along with mobile app and presented in farmer-centric way. The usability should be designed keeping literacy level of farmers in view.
- **Form Re-engineering:** The forms should be simplified removing any duplicate and unnecessary fields not required for the purpose of delivering the service. Only the data fields required to check eligibility and deliver effective services should be kept in the application form. The below principles need to be kept in mind for this purpose:
  - Meghalaya has started issuing Farmer ID to farmers. The basic details provided while getting Farmer ID should not be asked again in any of the service forms. The data captured first time while registering on State Portal should not be asked in the form and should be pre-populated in online forms.
  - Common forms should be designed for availing similar services from different departments in Primary Sector like for training, the farmer should choose trainings required in a single form.
- **Business Process Reengineering:** The To-Be steps for services defined in Future State Service Catalogue should be defined for implementation. Below principles need to be kept in mind for BPR of the services:
  - Simplified steps to apply for a service.
  - Elimination of process steps not adding much value to the service flow.

- Common form for multiple services to be availed together.
- Multiple channels to apply for service.
- Online Acknowledgement of the service with tracking.
- Financial assistance to be provided in beneficiary account.

As a result of game changers and business process reengineering implementation, the State-wide Building blocks would be consumed by the departments under Primary Sector:

- The business capabilities of the departments would be enhanced by various Common Solution Building Blocks.
- The Core Building Blocks would provide technical (IT Capability) to facilitate departments under Primary Sector to deliver their services.

### 3.9 Future State Business Architecture

The objective of MeghEA, related to Primary Sector pillar is to **connect** the service delivery points to the service beneficiaries, ensure **collaboration** within and outside the departments, and **empower** beneficiaries by providing control back to them.

The diagram below describes the future state aspiration of MeghEA for Primary Pillar:

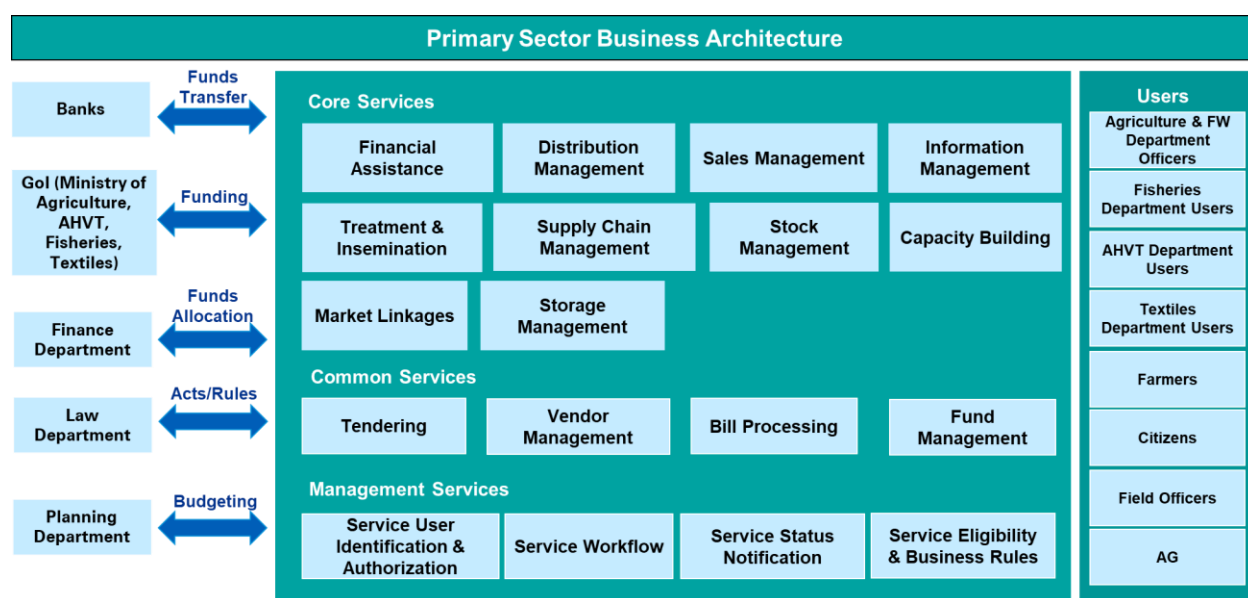


Figure 15: Primary Sector- Future State Business Architecture

The core services, common services and management services constitute the architecture building blocks. The success of 'MeghEA' vision depends on its holistic approach, communication, and meticulous execution of the above building blocks to ensure the expectations meets the desired objectives.

Subsequent sections would determine the solutions to realize the above building blocks using applications, data, technology and security. It is imperative that each of the above building blocks be delivered through standard architecture methodology. The solution requirements to develop the above building blocks would follow a prioritized roadmap, basis of the government's priority. Hence,

the realization of benefits would take a while however, the success measurement must be followed during the execution of the project.

To measure success, a similar approach must be followed to design solutions around the building blocks. As an illustration, digital service developed must adhere to the Digital Service Standard, the assessment framework must be followed to ensure all tenets are well covered for each service such as the service must have business process re-engineering executed before implementation.

Further, the Portal for Primary Sector would include all services grouped into domains for easier understanding and accessibility of the farmers. The future state service landscape for Primary Sector is as below:



Figure 16: Future State Service View

### 3.9.1 Stakeholders' benefits post realization of Future State

Considering, the limitations in service delivery centers, farms and other physical delivery points it is imperative that a plan to deliver services through online channels would greatly benefit the stakeholders.

#### Value to Government

##### Block/ Sub Divisional/ District Officers

- Automate **farmer identification** and reduce or eliminate need to setup department offices in delivering services related to farming inputs, farming assistance and other informational assistance services.
- Reduce or eliminate department officer's intervention in delivering **financial assistance**. All financial transactions to follow direct benefit route.
- **Automate** non-value-added processes through technology, non-value-add process such as file approval, service status, data search, certificate authentication checks and several other would be automated through **digital technologies**.

##### Head Office / Zonal Officers / District Officers

- Train department officers for value added tasks through digital means.
- Improved efficiency of **internal processes** to enhance convenience and transparency to farmers.
- Efficient monitoring of **price trends, farm outputs, market demand and supply**, to effectively deliver services. The large demand and supply gap in piglet distribution can facilitate planning and finally meeting the farmer's demand through greater farm outputs.
- Facilitate effectiveness of service **benefits** through **real-time** information, thus the need for field-based data collection would be minimized. As an example- number of farmers in block to number of farmers that could benefit from a scheme, could facilitate scheme planning.

#### Value to Businesses

##### Vendors

- **Ease of tracking** orders in the system and **real-time** alerts for the orders.
- **Online payments** directly into their bank accounts.

##### Suppliers/ Buyers

- **Real-time information** on prospective buyers and online facilities to connect farmers and buyers.
- **Real-Time** information on **transportation request** from the farmers to suppliers.
- Alerts of district wise stock positions and perspective orders to maintain inventory of stock.
- **Online payments** directly into their bank accounts.

#### Value to Citizens/ Farmers

- **Empowered** to apply for **entitled** schemes, facilitated by digital technologies farmers would be empowered to apply for services without the need for any intervention from department officers or village headman.
- **Assisted** and **ease of service** application, facilitated by **chatbots**, easy service application forms and **integrated** data, farmers would need little digital literacy to apply for services.
- **Minimal** need for physical visits to avail services.

- **Multiple channels** for farmers to apply for services at their convenience e.g. Mobile App, State Portal, Digital Facilitation Centre and Rainbow Centres.
- Periodic **alerts** on vaccination schedules to AHVT Farmers.
- **Real time service status**, market prices information availability to farmers over personal devices
- **Direct Benefit Transfer** in farmers account for eligible schemes.
- Facility to apply for transportation and food storage **facilities at the convenience** of a click.
- **Online appointments** for treatments and vaccines where possible.
- Request **transportation** and **food storage** at their conveyance.
- Enhanced knowledge on scientific/ improved methods of farming through **self-learning** videos.
- **Real time Advisories** through short messaging services(SMS) alert on weather forecast, pest & diseases incidence, identification of pest & diseases and their control measures.

The diagram below describes how the benefits to stakeholders are connected to the overall mission of the strategic pillar

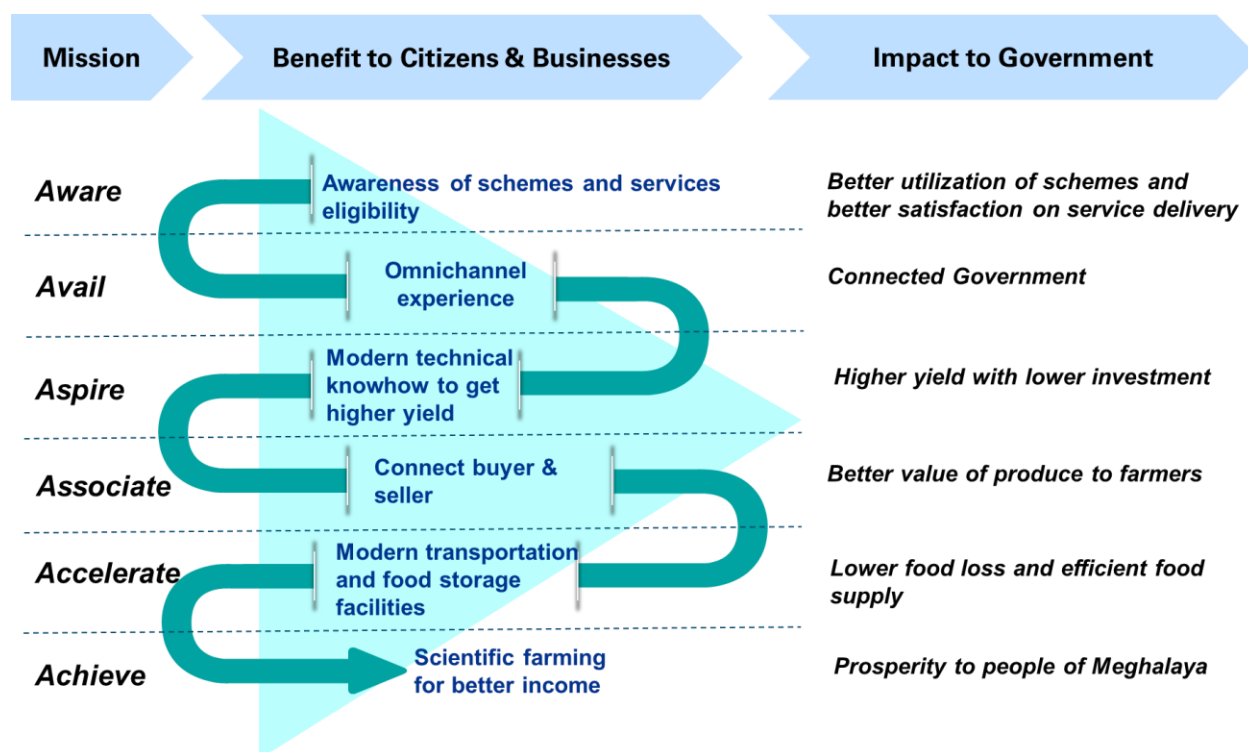


Figure 17: Connecting Mission to Benefits

## 4. Application Architecture

The application architecture model describes logical groups of IT Capabilities (logical application modules) that manage the data objects in the data architecture model and support the business services identified in the business architecture model. These components will tend to be static, but the technology portfolio used to implement them will change over time, based on the technologies currently available and changing business needs. The components provide the common, re-usable “Building Blocks” which can then be combined and orchestrated in order to construct business applications. The application architecture is based on the design principles defined in the Application Architecture principles of IndEA and shall ensure maximum value is extracted from IT investment, whilst at the same time minimizing the time, cost and complexity of developing, deploying, maintaining and enhancing the applications going forward.

### The Objective of Application Architecture

- The application architecture section tries to capture the future state application landscape in line with the business requirements of the Primary Sector Strategic Pillar. At Whole-of-Government level, the architecture framework would facilitate a common understanding of application assets and ICT services, identifying opportunities of sharing, re-use and consolidation or re-negotiation of licenses.
- The architecture framework would also assist in defining the data requirements, the design to store the data and how the data would need to be shared.
- The architecture would act as a framework in defining technology requirements.
- This would provide the framework through which Meghalaya Government would digitally **connect** with its stakeholders.
- Enable government to provide effective and integrated services to its stakeholders through integration – **collaborate**.
- This would also provide how processes and information would be executed to facilitate value delivery to citizens, **empowering** government service delivery stakeholders.

### 4.1 Application Architecture Taxonomy

The Application Architecture for MeghEA is based on a simple hierarchical structure made up of application domains, which are divided into a 4 layered structure. The 4 layers are represented by the 4 types of applications mentioned below.

- **Presentation Layer:** The presentation layer consists of the State portal, from where stakeholders would access the portal, Primary Sector Module would be within the state portal as a module.
- **Common Systems:** The Common Applications are pillar-agnostic but government-specific functionalities required and used by all pillars. These would also be built and maintained at State level.
- **Core Platform:** The core platform provides the technical functionalities to ensure whole-of-service functionalities and are pillar-agnostic.

- **ICT Tools:** The tools that are required to build develop and sustain the above applications, the data residing within the applications and infrastructure that are needed to track the system's performance.

The table below describes the functionalities applicable to Primary Sector in brief:

Application Type	Modules	Sub-Modules Functional Description
<b>Primary Pillar Module in State Portal</b>	Scheme Management	<ul style="list-style-type: none"> <li>• Scheme Preparation</li> <li>• Scheme Modification</li> <li>• Scheme Eligibility</li> <li>• Scheme Funding</li> <li>• Benefit Type</li> <li>• Scheme Services</li> <li>• MIS Reports</li> </ul>
	Supply Chain Management	<ul style="list-style-type: none"> <li>• Stock Addition/ Modification</li> <li>• Stock Scheme Mapping</li> <li>• Vendor Management</li> <li>• Stock Position</li> <li>• Order Details</li> <li>• Distribution Records</li> </ul>
	Insemination	<ul style="list-style-type: none"> <li>• Demand List</li> <li>• Supply List of Kits</li> <li>• MIS Report on Insemination</li> </ul>

Table 6: Application Architecture Taxonomy

Below is a tabular representation of common solution building blocks listed above along with the (tentative) choice of systems, system provider, requirement

Application Type	Modules	Choice of System (Tentative)	Package Provider	Mobile App
Primary Pillar Module in State Portal	Scheme Management	Customized (Bespoke) Web Based System	NIC Meghalaya	✓
	Supply Chain Management	Customized (Bespoke) Web Based System	NIC Meghalaya	✓
	Insemination	Customized (Bespoke) Web Based System	NIC Meghalaya	✓

Table 7: Solution Building Block – System Mapping

The list of common and core systems along with ICT tools has been provided as part of Minimum Viable Architecture(MVA) document separately. The same will be applicable to Primary Sector as well. The choice of system has also been marked as part of MVA.

The application domains mentioned above cater to the business layers defined in the business architecture. The table below maps the business requirements and application domains and provides a clear picture on how the business requirements will be met by the application

architecture.

Business Service	Applications
<b><u>Strategic Pillar Specific Services</u></b> The various services(domains): <ul style="list-style-type: none"> <li>• Financial Assistance to Farmers</li> <li>• Input Distribution to Farmers</li> <li>• Informational Services</li> <li>• Treatment to animals</li> <li>• Product Selling</li> <li>• Supply Chain Management</li> <li>• Training</li> </ul>	The modules within the Primary Sector Portal would provide the following <u>application</u> services: <ul style="list-style-type: none"> <li>• Scheme Management</li> <li>• Stock Management</li> <li>• Supply Chain Management</li> <li>• Price &amp; Trends</li> <li>• Insemination</li> <li>• Crossbreeding</li> </ul>

*Table 8: Service Application Mapping*

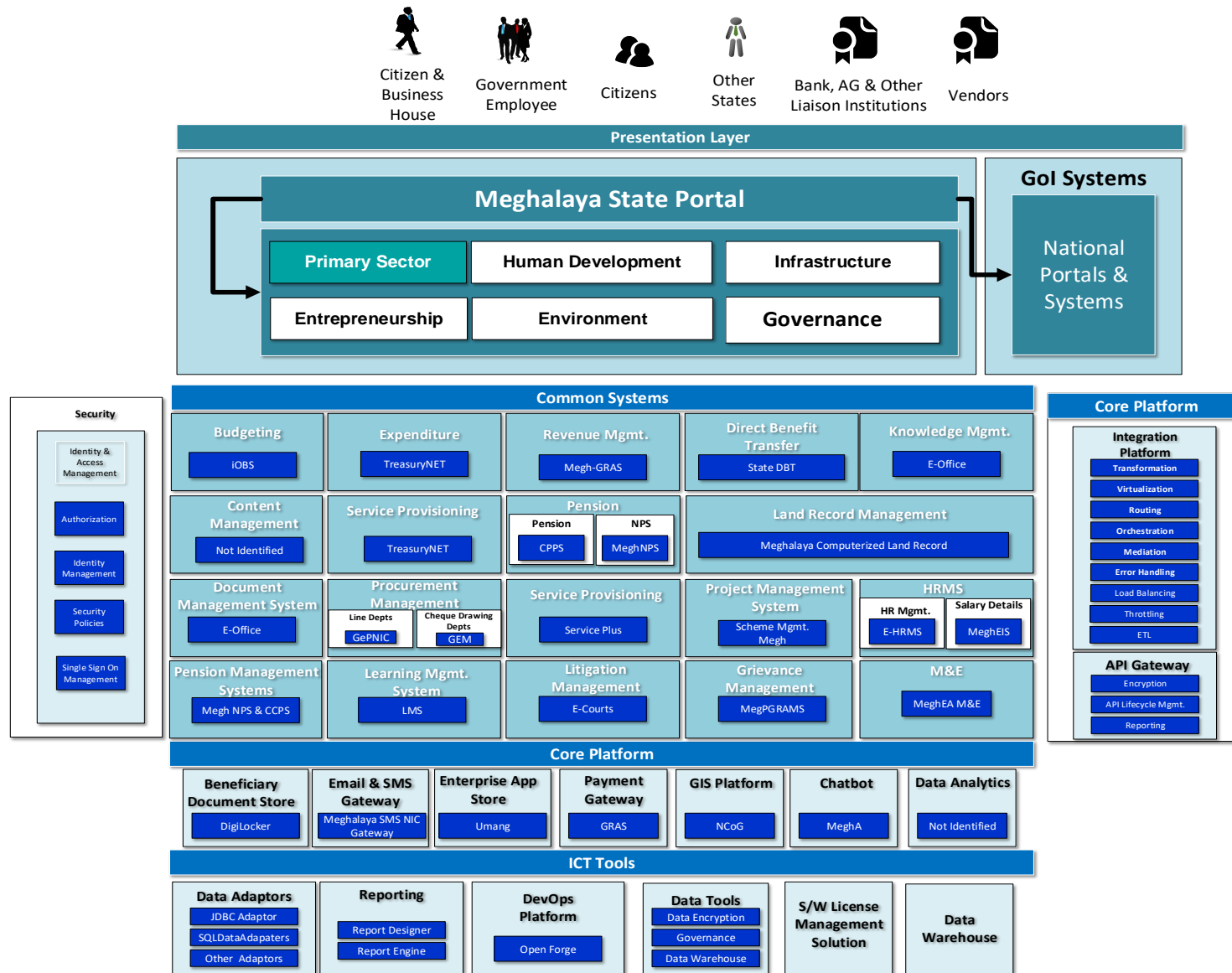


Figure 18: MeghEA - Statewide Application Architecture

## 4.2 As-Is State Application Architecture

The existing application landscape in primary sector has significant gaps. The primary gap is related to access to government services for farmers and citizens. This has led to lack of transparency in service delivery and lack of awareness of government services.

The existing systems that have been implemented is described below:

Application Name	Application Description	Application Architecture Description	Modules	No of Users
1917iTeams System	The system - 1917-Integrated Technology Enabled Agri Management System (1917iTEAMS) is a farmer centric, market-oriented, cloud-based facilitation service that connects farmers to markets through real time Agri advisories, affordable logistics, and market information	Based out of IIDS2.0 platform  Web Portal has been developed in LAMP Architecture (Linux, Apache, MySQL and PHP)  Asterisk is being used for IVRS	<ul style="list-style-type: none"> <li>• Farmers registration</li> <li>• IVRS</li> <li>• Logistics</li> <li>• Market Connect</li> <li>• Information Sharing</li> </ul>	22, 000 Farmers data but used only by approximately 50 call center executives
Meghalaya Agri Board	Web portal to enter and track prices of agriculture commodities	MS.Net 4.0, C# and MS SQL Database 2012	<ul style="list-style-type: none"> <li>• Price registration</li> <li>• Reports</li> </ul>	50
Farm Mechanization	System to facilitate farmers to apply for mechanization support	MS.Net 4.0, C# and MS SQL Database 2012	<ul style="list-style-type: none"> <li>• Registration for application</li> <li>• Application resolution</li> <li>• Application Tracking</li> </ul>	50 users per day
Soil Health Card	Central government system to facilitate soil testing and issuance of soil health card	Central System	<ul style="list-style-type: none"> <li>• Apply for SHC</li> <li>• Download SHC</li> <li>• Reports</li> </ul>	No Data found
AgMarknet	Agri-product prices are updated and displayed in the portal	Central System	<ul style="list-style-type: none"> <li>• Reports</li> </ul>	No Data found
PM Kisan	Static web portal for PM Kisan Scheme of the central government along with dashboard	Central System	<ul style="list-style-type: none"> <li>• Reports</li> </ul>	No Data found
Farmers Registration	Online web-based Portal	State System	<ul style="list-style-type: none"> <li>• Registration for</li> </ul>	95000+ as on 20 <sup>th</sup>

Application Name	Application Description	Application Architecture Description	Modules	No of Users
& Farmer ID Card			application <ul style="list-style-type: none"> <li>• Application resolution</li> <li>• Application Tracking</li> <li>• Reports</li> </ul>	July 2020

Table 9: As-Is Application Architecture

Application Name	Application Number	Type
1917iTeams System	PS.DEP.01	Department
Meghalaya Agri Board	PS.DEP.02	Department
Farm Mechanization	PS.DEP.03	Department
Soil Health Card	PS.DEP.04	Department
AgMarknet	PS.DEP.05	Department
PM Kisan	PS.DEP.06	Department
Farmers Registration & Farmer ID Card	PS.DEP.07	Department

Table 10: As-Is Application Encoding

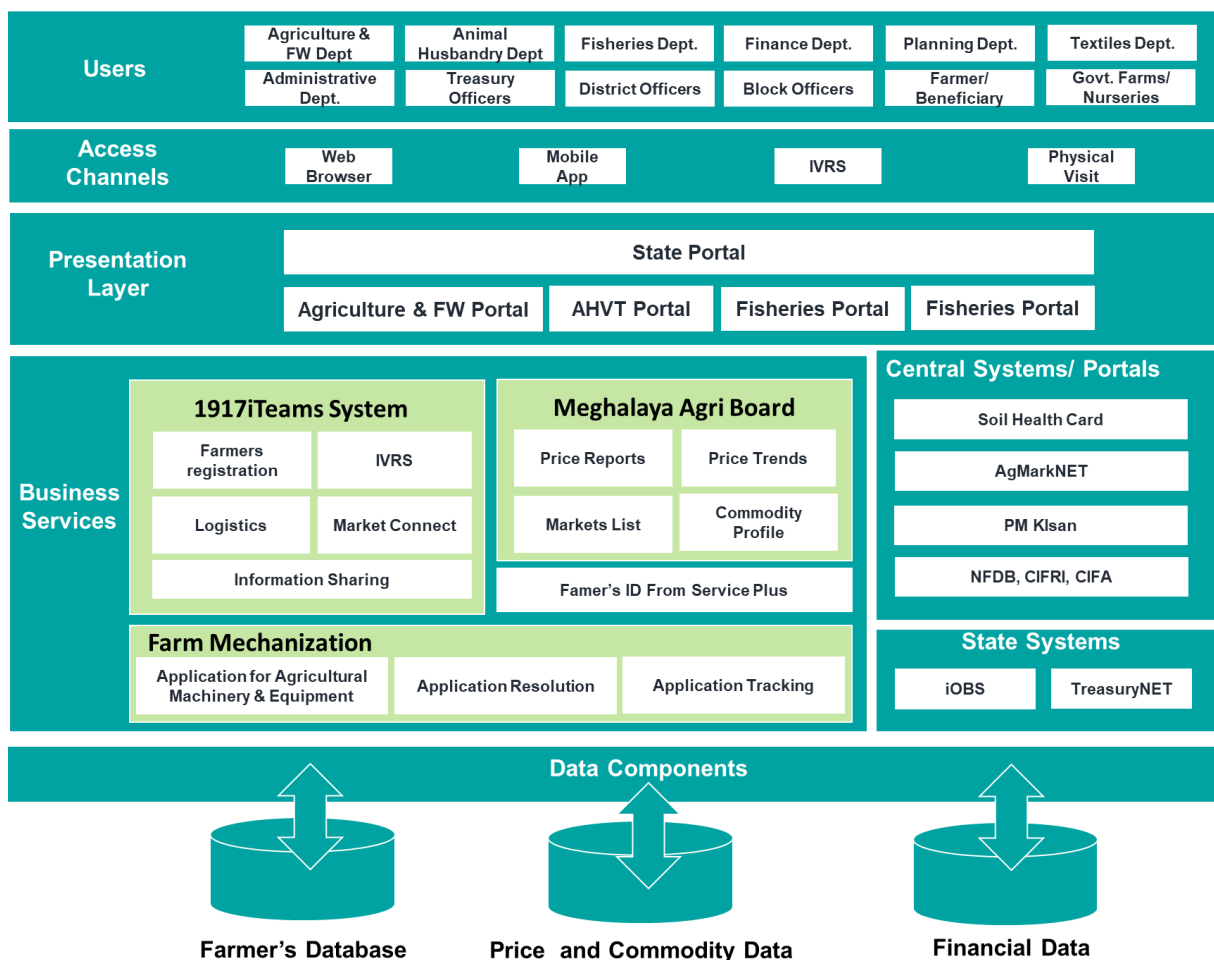


Figure 19: As-Is Application Architecture

The above diagram illustrates that apart from few business services, primary sector has significant gaps in delivering services through digital channels. While, there are few systems built in-silos, the usage is a concern and hence, benefits have not been realized, as per stakeholder voice.

Currently, no systems interact with each other. AgMarknet (Central System) and Meghalaya Agri Board System (State System) stores similar data in different processes of data entry and hence, do not integrate with each other.

The usage of the Agriculture & Farmers Welfare department systems is limited mostly in the internal teams. The 1917iteams and AgMarknet teams, entrusted for service delivery performs extensive data entry. 1917ITEAMS has registered 22,054 farmers to the database, transported 5,23,150 KG of farmers goods over 51,877 KMs valued at INR 67.77 Lakhs and registered 212 traders under Market Connect. Very recently, Farmer's ID system has been developed in Service Plus which is been recently implemented and has been able to register less than 1% of farmers.

Presently, few stakeholders have a specific role to play in the Agriculture & Farmers Welfare department, the role is mostly limited to data entry and registration in the department. There are few systems that the State Government must enable the connect to the farmers. Below is a pictorial description of the department specific systems that are used by various stakeholders in performing transactions.

Systems	1917iTeams System	Meghalaya Agri Board	Farmer's ID Service	Farm Mechanization	Soil Health Card
Stakeholders					
Agri Farmers	Registration	Price Data	Registration	Machinery Request	Apply
AHVT Farmers		Price Data			
Fisheries Farmers		Price Data			
Superintendents				Approval	Issue Card
Department HoDs		Price Data			
Call Centre/ Data Entry Executives	Data Entry	Data Entry			
Traders					
Soil Testing Lab	Registration	Price Data			Test

Figure 20: Stakeholder - System Matrix

## 4.3 Gap Assessment

There are several gaps that exist in consideration to the existing application landscape in Primary Sector. The central government system does cater to few of the critical services for a farmer, however, most of the services lack digital instances to facilitate service delivery. Further, no information of systems being used by Fisheries and AHVT departments is made available.

Considering the Farmer's Service Lifecycle below are the gaps at every stage of the farmer's lifecycle.

Stage	Gaps	Impact
Input Distribution	No system exists that can facilitate input distribution service. Farmers are not equipped to apply for service and department stakeholders are not facilitated to track service requests, perform checks related to demand for inputs and supply of inputs	<p>The impact is multi-fold:</p> <ul style="list-style-type: none"> <li>• No transparency in service beneficiary selection</li> <li>• Service beneficiary's selection lacks efficiency and accuracy</li> <li>• Lack of service awareness</li> <li>• Inputs distribution lacks efficiency – demand and supply gap exist</li> <li>• No facilities to track service requests</li> </ul>
Information Services	<p>Information can be categorized to several types under pre-harvest:</p> <ul style="list-style-type: none"> <li>• Weather alerts</li> <li>• Soil Health</li> <li>• Demand gap</li> <li>• Commodity price</li> <li>• Marketing programs</li> <li>• Food festivals</li> <li>• Government services</li> <li>• Disaster relief</li> </ul> <p>Apart from market price, information dissemination is a gap in the state. 1917 teams only cater to small section of the farmers (less than 5%)</p>	<p>Farmers are largely unaware of government services. Recently, farmers commission has been formed and is scheduled to meet annually. But this initiative would partly solve the problem.</p> <p>Government needs a holistic strategy to disseminate information that would cover multiple ways</p>
Financial Assistance	There is no system to apply for financial assistance except for the systems by Government of India (PMKisan). No system driven criteria to identify right beneficiaries and disburse financial assistance directly to their bank accounts. Financial	<ul style="list-style-type: none"> <li>• Manual tracking of funds provided to farmers.</li> <li>• No application tracking for the applicant.</li> <li>• Chances of skipping/ not checking proper eligibility for the benefit.</li> </ul>

Stage	Gaps	Impact
	Assistance to farmers is mostly by way of in kind	<ul style="list-style-type: none"> <li>Benefits are not availed by the beneficiaries.</li> </ul>
Training (Capacity Building)	Training content is not re-used, and trainings are largely provided in physical modes	<p>The trainings service is not cost effective to the state as it requires high degree of resource availability.</p> <p>Inability to re-use content is also an efficiency gap.</p>
Logistics	Unavailability of systems leads to a disconnect among farmers and market. 1917iteams has a service of providing carriage vehicles to farmers in 8 blocks. A state-level system can be built that can cater to multiple stakeholders – buyers and sellers to build up an efficient supply chain.	Farmers lack facilities to help them carry agriculture and veterinary produces from farms to markets. Meghalaya suffers from having one of the lowest density of roads per square km. Without assisted carriages farmers are not able to carry goods from farms to market.
Storage Facilities	Limited cold storages are there in Meghalaya, thus a system would help track availability of cold storages to facilitate proper storage.	Farmers are highly impacted as they have to sell produces at lesser price due to unavailability of cold storage or lack of assurance in cold storage facilities.
Market Connect	Buyers are not connected with sellers, 1917iteams has close to 200 buyers. A system could have facilitated the connect.	Proliferation of middleman leads to low sell value to farmers and high cost to citizens for Agri products.

Table 11: Gap Assessment

There are several gaps in business functional coverage and service delivery enablement. However, over the course of the years the state along with some focus teams have developed few systems to bridge these gaps. The systems so developed have few lacunae, below is a high-level representation of the gaps.

#### 4.3.1 1917 iTEAMS System

Category	Description
<b>Functional Modules</b>	<ul style="list-style-type: none"> <li>Farmers registration</li> <li>IVRS</li> <li>Logistics</li> <li>Market Connect</li> <li>Information Sharing</li> </ul>

Category	Description
<b>Technology</b>	<ul style="list-style-type: none"> <li>Web Portal has been developed in LAMP Architecture (Linux, Apache, MySQL and PHP)</li> <li>Asterisk is being used for IVRS</li> </ul>
<b>Business Functional Gaps</b>	<p>Missing Business functionality:</p> <ul style="list-style-type: none"> <li>Service application facility.</li> <li>Registration facility – duplicate with NIC newly built system.</li> <li>No facility to locate cold storage.</li> <li>Weather related alerts through SMS/ Notifications.</li> <li>Support demand for logistics.</li> <li>The system is purely based on IVRS, thus not able to facilitate farmers to avail services through assisted or self-driven delivery channel.</li> <li>Department is largely disconnected with the team; hence, no coordination exists.</li> </ul>
<b>Application Architecture Gaps</b>	<ul style="list-style-type: none"> <li>Internal Call centre application not exposed to beneficiaries. Facilities driven by phone call-based service requests.</li> <li>No data sharing based facilities.</li> </ul>
<b>Data Architecture Gaps</b>	<ul style="list-style-type: none"> <li>Farmer's data stored without an identifier; this leads to duplicity in records.</li> <li>Data backup, archival and restoration policy does not exist.</li> <li>Data quality management activities are missing.</li> </ul>
<b>Technology Architecture Gaps</b>	<ul style="list-style-type: none"> <li>The application is hosted in DIC, Mumbai thus, the infrastructure is not located in the state and no details of the infrastructure has been provided by the team.</li> </ul>

### 4.3.2 Meghalaya Agri Board System

Category	Description
<b>Functional Modules</b>	<ul style="list-style-type: none"> <li>Price Reports</li> <li>Price Trends</li> <li>Commodity Profile</li> <li>Markets List</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>MS.Net 4.0, C# and MS SQL Database 2012</li> </ul>
<b>Business Functional Gaps</b>	<p>Missing Business functionality:</p> <ul style="list-style-type: none"> <li>Filtering facilities commodity wise</li> <li>Market wise filters</li> <li>Facility to select multiple date</li> </ul>

Category	Description
	<ul style="list-style-type: none"> <li>• Business intelligence-based reports – insights and analysis</li> <li>• Additional charts and graphs on commodity wise price trends</li> <li>• Supply- demand gap is not showcased</li> <li>• Meghalaya specific produces are not highlighted in separate reports</li> <li>• No animal/poultry and dairy data or reports</li> <li>• Fisheries related data is missing</li> </ul>
<b>Application Architecture Gaps</b>	<ul style="list-style-type: none"> <li>• Application UI does confirm to GIGW guidelines on:</li> <li>• Accessibility, Mobile friendliness, Assistive technology, screen reader access</li> <li>• UI is compatible to limited browser (IE 8)</li> <li>• Application built-on PHP and PostgreSQL in single tier architecture</li> <li>• Business logic layer is engraved in system layer</li> <li>• System architecture does not have integration capability</li> </ul>
<b>Data Architecture Gaps</b>	<ul style="list-style-type: none"> <li>• No commodity identifier, hence, data sharing and re-use is difficult</li> <li>• Market entity is not connected to GIS ID, these leads to issues in future integration</li> <li>• Data model have limitation with respect to data design – this leads to in-efficiency in data query</li> </ul>
<b>Technology Architecture Gaps</b>	<ul style="list-style-type: none"> <li>• No details of the infrastructure have been provided by the team.</li> </ul>

### 4.3.3 Farm Mechanization

Category	Description
<b>Functional Modules</b>	<ul style="list-style-type: none"> <li>• Application for Agricultural Machinery &amp; Equipment</li> <li>• Application Resolution</li> <li>• Application Tracking</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>• MS.Net 4.0, C# and MS SQL Database 2012</li> </ul>
<b>Business Functional Gaps</b>	<p>Missing Business functionality:</p> <ul style="list-style-type: none"> <li>• Filtering facilities commodity wise</li> <li>• Market wise filters</li> <li>• Facility to select multiple date</li> <li>• Business intelligence-based reports – insights and analysis</li> <li>• Additional charts and graphs on commodity wise price trends</li> <li>• Supply- demand gap is not showcased</li> <li>• Meghalaya specific produces are not highlighted in separate reports</li> <li>• No animal/poultry and dairy data or reports</li> <li>• Fisheries related data is missing</li> </ul>

Category	Description
<b>Application Architecture Gaps</b>	<ul style="list-style-type: none"> <li>Application framework is outdated</li> <li>Application has frequent fatal errors with no user-friendly messages</li> <li>System architecture does not have integration capability</li> <li>Workflow is not flexible and would require coding changes for any new business flow</li> </ul>
<b>Data Architecture Gaps</b>	<ul style="list-style-type: none"> <li>No flexibility to verify farmer's through system-based data</li> <li>No facility to store farmer's data</li> <li>Tracking of service requests only through system generated ID, this creates a need for farmers to record request ID leading to duplicate requests</li> <li>Gaps exist in data management related activities</li> </ul>
<b>Technology Architecture Gaps</b>	<ul style="list-style-type: none"> <li>No details of the infrastructure have been provided by the team.</li> </ul>

## 4.4 SWOT Analysis of Application Architecture

Analysis Paradigm	Key Pointers	Target State
Strength	Current portfolio of Central Government systems to cater specific services like PM Kisan, Soil Health Card etc.	Retained
	Capability to integrate with external systems using web services.	Retained
	Workflow management system (Service Plus).	Retained
Weakness	Monolith architecture with minimal integration capability.	Recommended for Decommissioning
	Multiple systems with multiple user profiling.	Recommended for SSO
	Unavailability of Integration platform.	Recommended for State Service Bus and API-Gateway
	Lack of service digital maturity.	Partially Eliminated
Opportunity	Adoption of emerging technology to address unthinkable business capability gaps	Realized
	Introduction of new services in digital service delivery channels	Realized
	Introduction of integration platform	Realized
	Portfolio rationalization	Realized
Threats	Unavailability of SSO leads to non-uniform security	Addressed
	Primitive user experience may lead to hinderance in technology adoption	Not Addressed
	Resistance towards adoption of systems and inclination towards manual mode of service delivery	Not Addressed

## 4.5 Application Transformation Plan

Based on the current state understanding, it is observed that the Agriculture, Fisheries, Animal Husbandry & Veterinary and Textiles Departments of Government of Meghalaya have few systems to facilitate service delivery. These systems are non-compliant to architecture principles, standards and have several gaps in various architecture domain.

Following activities were executed to arrive at the application transformation categories:

1. **Prioritized Service Catalogue:** Assessment of Prioritized Service Catalogue and its service processes to derive the functional requirements of the system. Refer section 3.4 for details.
2. **Technical Assessment of Systems:** Technical Assessment of Systems to understand the gaps and opportunities to effectively deliver the prioritized services.
3. **Functional assessment** of the existing systems.

Following categories of changes are planned for the applications:

1. **Business Functionality Addition/Elimination:** This would be applicable for systems which have limited capability, existing functionality would be transferred to existing/ new system to ensure better service delivery.
2. **Application Architecture Enhancement:** The application may have been supporting critical functionality with low technical fitment. It is imperative that the application needs to be modified to incorporate necessary architecture enhancement or new functionality would be incorporated
3. **Decommission:** Systems that have duplicate or redundant functionality would be decommissioned to rationalize the portfolio and enhance efficiency.
4. **New Introduction:** System to be added in the portfolio to facilitate digital delivery of services, the functionality of the system would be new to the application portfolio.

Basis gap assessment study and analysis, below table represents the plan

Application	Category for Transformation	Description
1917iteams System	<ul style="list-style-type: none"> <li>Business Functionality Elimination and alignment to Primary Sector</li> </ul>	Functionality related to registration of buyer and seller would be eliminated. The system would fetch farmer details from Primary Sector system to get profile. The system would be restricted to usage for call centre executives.
Meghalaya Agri Board System	<ul style="list-style-type: none"> <li>Application Architecture Enhancement</li> </ul>	<p>The system needs to be upgraded under following categories:</p> <ol style="list-style-type: none"> <li>1. Consolidation of data entry for AgMarkNET and Meghalaya Agri Board System.</li> <li>2. Addition of new visually appealing reports and charts.</li> <li>3. Technology framework upgrade.</li> <li>4. Data rollup from markets to blocks, districts and State.</li> </ol>

Application	Category for Transformation	Description
Farm Mechanization	<ul style="list-style-type: none"> <li>Decommissioned</li> </ul>	The system needs to be decommissioned as business functionality would be largely driven by newly proposed system.
Farmers Registration & Farmer ID Card	<ul style="list-style-type: none"> <li>Decommissioned</li> </ul>	Farmers registration would be part of any new service from service plus related to primary sector.
Primary Sector System	<ul style="list-style-type: none"> <li>New Introduction</li> </ul>	<p>The modules within the system would be:</p> <ul style="list-style-type: none"> <li>Scheme Management</li> <li>Stock Management</li> <li>Supply Chain Management</li> <li>Insemination</li> <li>Crossbreeding</li> </ul>

Table 12: Application Transformation Plan

## 4.6 Future State

It is critical to note that, MeghEA would follow the **minimum viable architecture** principle. Hence, not all building blocks stated above would be built in a big bang approach. Rather, the roadmap would follow a step-by-step approach to ensure a smooth transition to the future state and a holistic approach that includes dependency assessment and several other considerations such as legal and regulatory assessment before project initiation.

The Prioritization Phase-I, would implement a minimum viable architecture for Primary sector that includes following principles:

- Implementation of systems that are mandatory for coverage of prioritized business service digital implementation
- Implementation of common systems that can be used in a plug and play model, however these systems would be aligned to IndEA principles
- A high-level cost impact assessment would be considered for derivation of the Phase-I architecture plan

Based on above principles, below is a diagrammatic representation of the Phase-I Application Architecture for Primary Sector

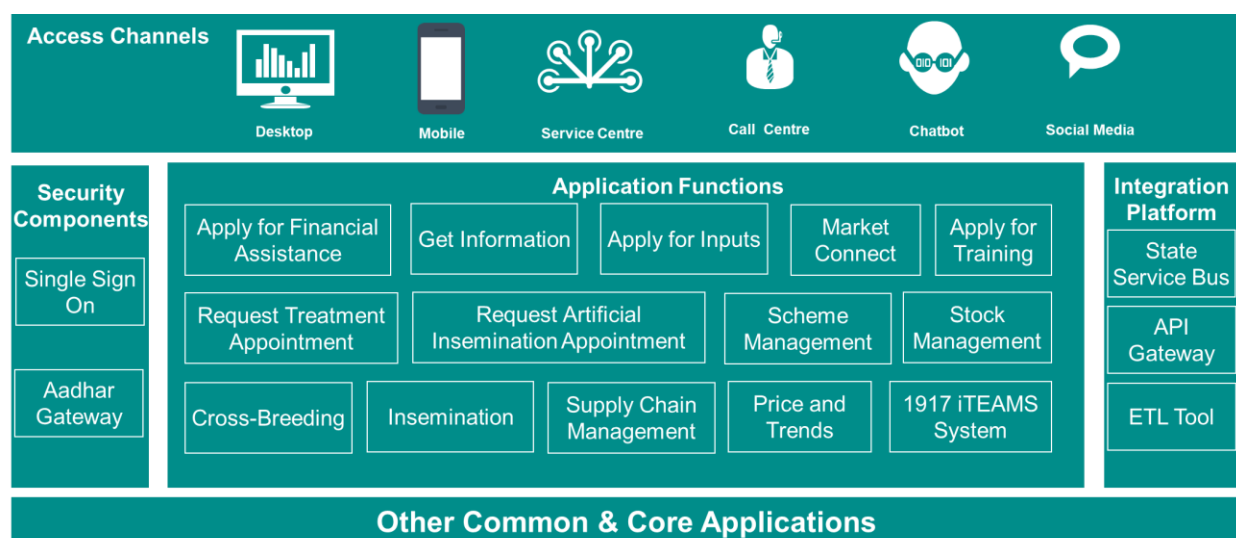


Figure 21: Primary Sector Application Architecture

The above diagram illustrates the Phase -I application portfolio for Primary Sector. The core and common applications to be included are described in State-wide Detailed Architecture Requirement document.

Below is the system functionality for the Primary sector new applications.

Primary Sector (New Applications)		
New Modules	Sub-Modules	Description
Scheme Management	<ul style="list-style-type: none"> <li>• <u>Scheme Preparation</u>: This functionality would enable new scheme to be prepared, service eligibility to be set-up and services to be delivered</li> </ul>	

Primary Sector (New Applications)		
		<ul style="list-style-type: none"> <li>• <u>Scheme Services MIS Reports</u>: MIS report on scheme progress with respect to number of beneficiaries benefitted, fund utilized, pending requests and other related information</li> <li>• <u>Scheme Modification</u>: Sub-module to modify scheme basis government decision</li> <li>• <u>Scheme Funding</u>: Set funding for scheme and map to 17-digit scheme code</li> <li>• <u>Scheme Eligibility</u>: Define scheme eligibility parameters that can be used by system to perform automated checks. This would not be comprised of any descriptive values. The eligibility check may have (as an example) requirement of Farmer's ID as a mandatory value</li> <li>• <u>Benefit Type</u>: This would capture the service output such as seeds, machinery, etc.</li> <li>• <u>Service Mapping</u>: For cases, where multiple services are mapped. The data would capture the services which would be mapped to the scheme</li> </ul>
Supply Chain Management		<p>The module would capture information for all departments related to goods that are planned for distribution:</p> <ul style="list-style-type: none"> <li>• Stock addition and modification.</li> <li>• Vendor management.</li> <li>• Stock position.</li> <li>• Order details.</li> <li>• Distribution records.</li> </ul>
New Service Application (Service Plus)	Apply for service	<p>Please follow the list of new service to be implemented in service plus in the <a href="#">section 9.6</a></p> <p>Service plus new service application would be initiated from following options:</p> <ul style="list-style-type: none"> <li>• Portal</li> <li>• Chatbot- Ask Megha</li> <li>• IVRS from 1917iTeams</li> </ul> <p>Service Plus would be integrated with following records database:</p> <ul style="list-style-type: none"> <li>• UIDAI Aadhar Gateway for Aadhar verification</li> <li>• Farmers database for Farmer's ID verification</li> <li>• Local Government Directory for location identification</li> <li>• Scheme Module for service eligibility checks</li> <li>• Email, SMS Gateway for notifications</li> </ul> <p>Service Plus would enable system level validation and verification. Business rules for each service would be implemented dynamically in service plus.</p>
	Track Service	<p>The module would facilitate service beneficiary to track status of service request. Following would be the tracking identifier:</p> <ul style="list-style-type: none"> <li>• Service Request Number</li> <li>• Aadhar Number</li> <li>• Registered Phone Number (if any provided at registration time)</li> </ul>

Primary Sector (New Applications)	
Insemination	<p>The module would capture</p> <ul style="list-style-type: none"> <li>• Demand request list for artificial insemination</li> <li>• List of artificial insemination kits available</li> <li>• MIS reports for various insemination procedures carried out at block, district and state level</li> </ul>
Crossbreeding	<p>The module would enable scheduling of cross breeding insemination, comprising of following functions:</p> <ul style="list-style-type: none"> <li>• Schedule for Insemination</li> <li>• Insemination stock</li> <li>• Record of crossbreeding insemination</li> </ul>
Market Prices and Trends	<p>This module would capture information the way it is collected currently. Following information are collected and entered through a data entry scree:</p> <ul style="list-style-type: none"> <li>• Commodity Name</li> <li>• Commodity Market – District and block</li> <li>• Commodity Price – Date wise</li> </ul>
1917iteams System	<p>The current system would continue to exist with the following modules</p> <ul style="list-style-type: none"> <li>• Farmers registration</li> <li>• IVRS</li> <li>• Logistics</li> <li>• Market Connect</li> <li>• Information Sharing</li> </ul>
<b>Technical Architecture</b>	
<b>Application Architecture</b>	<p>Application to be built in Service Oriented Architecture/Micro-Service Architecture with complete isolation of business logic. The architecture needs to follow MeghEA architecture principles and adhere to MeghEA application architecture standards. These standards and principles are derived from IndEA</p>
<b>Data Architecture</b>	<p>Please follow data architecture section for data design:</p> <ul style="list-style-type: none"> <li>• Conceptual Data Model</li> <li>• Logical Data Model</li> </ul> <p>Physical data model must be derived aligned to the Logical Data Model</p>
<b>Technology Architecture</b>	<p>The system would be deployed at State Data Centre and following are required:</p> <ul style="list-style-type: none"> <li>• Application Server</li> <li>• Web Server</li> <li>• Database Server</li> </ul> <p>Please refer Technology architecture section for detailed requirement</p>

Table 13: Primary Sector New Applications

#### 4.6.1 The Service – Application Matrix

There are three categories of applications for flow of information across modules to deliver services in primary sector.

The categories of applications are:

**Register for Service, Service Workflow, Service Resolution:** The system through which services would be requested, service workflow would be executed, and service resolution would be provided (approval/forwarding)

**Service Internal Processing:** To check supply-demand gap and ensure service delivery can meet the demand

**Additional System:** The service internal processing would ensure commodity services are automated i.e. government generated certificates/NoC/License data are fetched. Making the service application process smooth to ensure no such certificates/licenses/NoC are required. For Service Application module mapping, please refer [Annexure 9.11](#)

Future state applications in Primary Sector would be as follows:

Application Name	Application Number	Type
1917iTeams System	PS.DEP.01	Department
Meghalaya Agri Board	PS.DEP.02	Department
Primary Sector System	PS.GRP.07	Group
State DBT	MEG.COM.01	Common
Learning Management System	MEG.COR.01	Core
e-Office	MEG.COM.02	Common
Service Plus	MEG.COR.02	Core
TreasuryNet	MEG.COM.03	Common
iOBS	MEG.COM.04	Common
Chatbot	MEG.COR.03	Core
MeghEIS	MEG.COM.05	Common
Email/ SMS Gateway	MEG.COR.04	Core
GRAS	MEG.COM.06	Common
DigiLocker	MEG.COR.05	Core

Table 14: Future State Application Encoding

## 4.6.2 Future State Application Communication Model

The future state application communication model would not be based on point to point integration rather be enabled by State Integration platform. The integration platform's primary function would be to provide the connections between communicating applications - acting much like a router to control the data. The interaction and communication between components are across the platform, which has a similar function as a physical computer bus to handle data transfer or message exchange between services without writing any actual code.

As per the business architecture interaction matrix (please refer section), the systems need a high degree of integration owing to the varied portfolio and business functional capability. To enable information flow for effective business integration, the integration platform would ensure reliable, cost effective and managed integration across the systems.

Below are the logical integration details between each system

Consumes Information Provides Information ↓	Primary Sector System	State DBT	Learning Management System	E-Office	Service Plus	TreasuryNET & iOBS	Chatbot	MeghEIS	Email/ SMS Gateway	1917 iTEAMS	GRAS	DigiLocker
Primary Sector System		Beneficiary Bank Details	Requests digital content based on service request	Request Acts/Rules	Invoke Service Request from list Provide Resolution Stakeholder	LOA Amount scheme code wise	Information Services	Stakeholder Information Request	Email notification	Farmer Details Request	Service Payment	Citizen License, ID Card
State DBT	Payment update											
Learning Management System	Publishes digital content based on service request											
E-Office	Acts & Rules						Service Status					
Service Plus	Service Status											
TreasuryNET & IOBS		Payment Request										
Chatbot					Service Request No							
MeghEIS	Service Resolution Stakeholder Details								Email id of Dept. Stakeholder	SMS of Dept. Stakeholder		
Email Gateway	Email/ SMS notification to stakeholders											
1917 iTEAMS	Farmer Details											
Megh GRAS	Service Payment Status											

Consumes Information ---> Provides Information ↓	Primary Sector System	State DBT	Learning Management System	E-Office	Service Plus	TreasuryNET & iOBS	Chatbot	MeghEIS	Email/ SMS Gateway	1917 iTEAMS	GRAS	DigiLocker
DigiLocker	Citizen Requested Document											

Table 15: Application Communication Model

Basis of the above communication matrix, below diagram is an illustrative representation of application

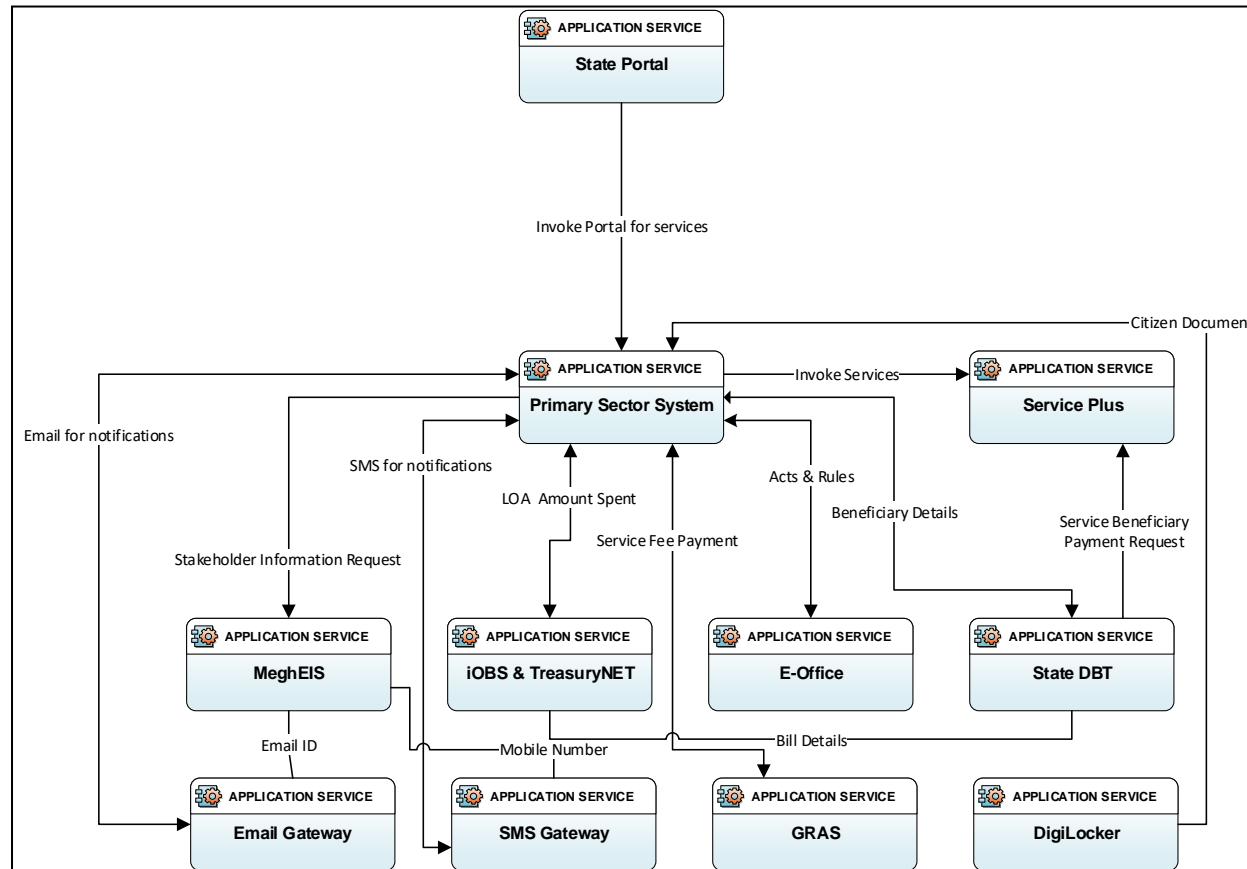


Figure 22: Future State- Application Communication Model

Even though above diagram illustrates the logical model for application communication, the practical implementation would be different.

The future state application communication model would not be based on point to point integration rather be enabled by State Integration platform. The integration platform's primary function would be to provide the connections between communicating applications - acting much like a router to control the data. The interaction and communication between components are across the platform, which has a similar function as a physical computer bus to handle data transfer or message exchange between services without writing any actual code.

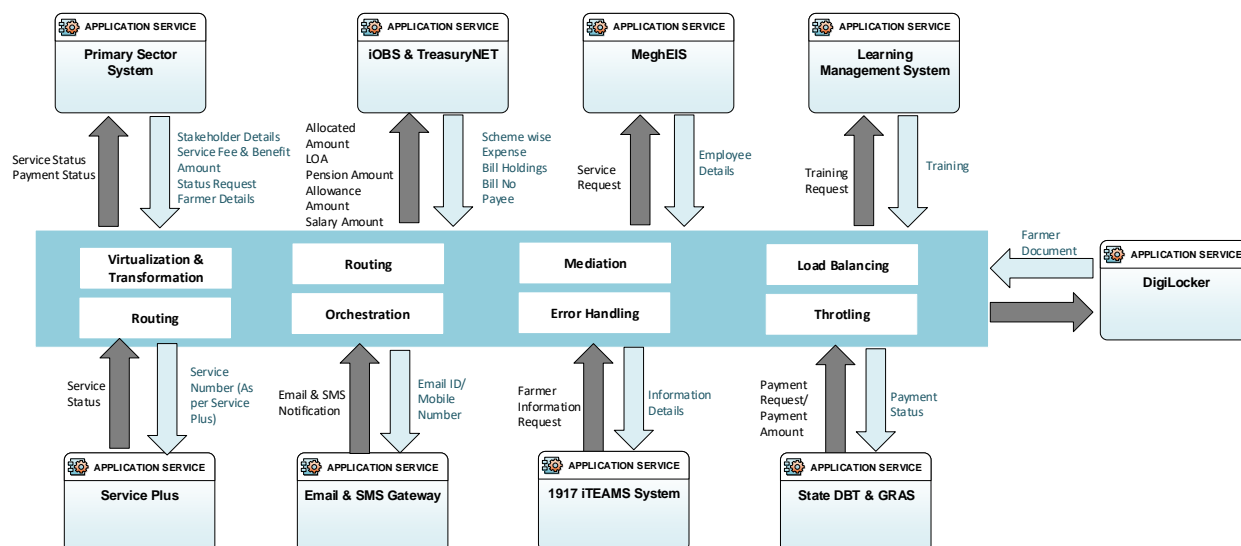


Figure 23: Application Integration Architecture

Based on above analysis, following APIs (logical level) needs to be made available. Please note the list below is indicative in nature and needs to be further elaborated at the time of implementation.

API/ Service	Application	Data Sharing Details	Source Application	Destination Application
Service Request		<ul style="list-style-type: none"> <li>Service ID (Number)</li> <li>Mobile Number (Number)</li> </ul>	Chatbot	Service Plus
Service Acknowledgement Status		<ul style="list-style-type: none"> <li>Service request ID(Number)</li> <li>Service application URL</li> </ul>	Service Plus	Chatbot
Aadhar Verification		<ul style="list-style-type: none"> <li>Aadhar Number</li> <li>Verification Result</li> </ul>	Service Plus	UIDAI
Fetch Name & Demography-Aadhar		<ul style="list-style-type: none"> <li>Aadhar Number</li> <li>Name</li> <li>Date of Birth</li> <li>Last Name</li> <li>First Name</li> <li>Address</li> <li>Pin Code</li> </ul>	Service Plus	UIDAI

API/ Service	Application	Data Sharing Details	Source Application	Destination Application
		<ul style="list-style-type: none"> <li>Sex</li> </ul>		
Request Inputs		<ul style="list-style-type: none"> <li>Farmer's Digital ID</li> <li>Farmer's demographic details</li> <li>Input Type</li> <li>Input Sub-Type</li> <li>Input Count Requested</li> <li>Nearest Farm</li> <li>Supporting Document</li> <li>Approval</li> </ul>	Service Plus	Primary Sector System – Scheme Management Module
Request Insemination		<ul style="list-style-type: none"> <li>Farmer's Digital ID</li> <li>Farmer's demographic details</li> <li>Animal breed type</li> <li>Insemination Details</li> <li>Nearest Farm</li> <li>Supporting Document</li> <li>AHVO Approval</li> </ul>	Service Plus	Primary Sector System – Insemination Module
Request breeding	Cross	<ul style="list-style-type: none"> <li>Farmer's Digital ID</li> <li>Farmer's demographic details</li> <li>Animal breed type</li> <li>Insemination Details</li> <li>Nearest Farm</li> <li>Supporting Document</li> <li>AHVO Approval</li> </ul>	Service Plus	Primary Sector System – Crossbreeding Module
New Supply Request Funding		<ul style="list-style-type: none"> <li>Farmer's Digital ID</li> <li>Farmer's demographic details</li> <li>Input Type</li> <li>Input Sub-Type</li> <li>Input Count Requested</li> <li>Nearest Farm</li> <li>Supporting Document</li> <li>Approval</li> </ul>	Primary Sector System	iOBS
Service Status		<ul style="list-style-type: none"> <li>Service Request ID</li> <li>Service Status</li> <li>Reason for Delay</li> </ul>	Primary Sector System	Service Plus

Table 16: Logical Application Integration Requirements

### 4.6.3 Illustrative Use Cases: Farmer Apply Service

Based on above analysis, MeghEA Primary Sector Application Architecture would aim to be futuristic and visionary to achieve citizen centric objectives that has not been achieved in many Indian states. Below are the objectives which would be realized.

#### Accessibility

The services would be available in many delivery channels and enabled by Chatbot with artificial

intelligence capability. The IndEA principle of Anywhere, Anytime Service Delivery is at the core of the architecture. The service availability channel includes:

- Chatbot
- State Portal
- Interactive Voice Response System
- Social Media Channels – Facebook Chat and WhatsApp
- Common Service Centers

### Service Ease

Data once captured would not be asked again, document storage and application integration would be aimed to minimize service forms data requirement to minimal. For these multiple data repository would be connected to verify citizen's data and pre-populate the descriptive data.

### Service Tracking

Enabled by modern systems, service workflow would be enabled by SMS/Email notifications. All services, as per service timeline would be tracked along with escalation mechanism to escalation to appropriate stakeholders in cases of service delivery delay.

### Commodity Services

Certificates, License, Approval, NoC and similar such documents would be available for citizens without the need of citizens asking for the document. These documents would be stored in secured citizen locker.

Below is a use case depicting the same for primary sectors. Citizens would be facilitated with services through simple and easy process steps.

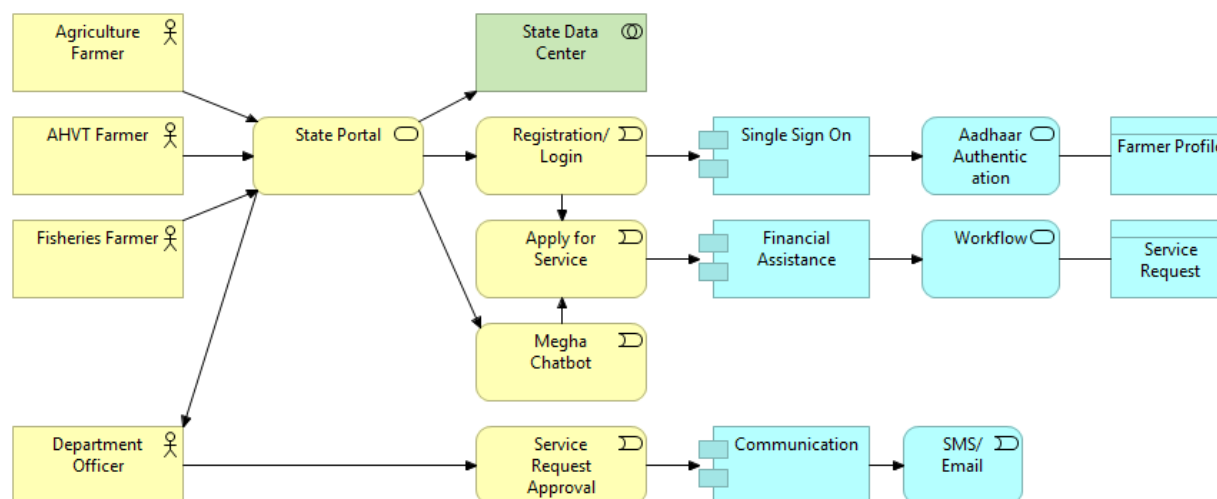


Figure 24: Illustrative Use Case

## 4.6.4 The Future State Application – Stakeholder Matrix

One of the key objectives of MeghEA – Primary Sector Application Architecture is to enable all stakeholders with digital service delivery and resolution channels. The application so designed is aimed to ensure all stakeholders are taken into consideration to design the application functionality

Primary Sector has a varied list of stakeholders – Citizens (at the core of it), Department Employees,

Animal Husbandry Inspectors, Veterinary Doctors, Fisheries department Stakeholders, Financial Advisor, NGOs, Agri/AHVT/Fisheries Buyers, Middleman, etc. Below is a table illustrating the planned mapping for Primary Sector:

Stakeholders	Primary Sector Application						
	Scheme Mgmt.	Supply Chain Management	Service List	Insemination	Crossbreeding	Market Price	1917 iTEAMS Systems
District Agriculture Officer		✓	✓			✓	
Agriculture Development Officer		✓	✓			✓	
Director Agriculture	✓		✓				
Project Director ATMA	✓		✓				
Secretary MSAMB	✓		✓				
Under Secretary Agriculture	✓		✓				
Joint Director of Agriculture	✓		✓				
Deputy Director of Agriculture	✓		✓				
State Soil Survey Officer	✓		✓				
Monitoring-cum-Evaluation Officer	✓		✓				
Agriculture Census Officer	✓		✓				
Farm Superintendent		✓	✓				
Agriculture Information Officer	✓	✓	✓				
Asst/Agriculture Inspector			✓				
Joint Director of Horticulture	✓		✓				
Deputy Director of Horticulture	✓		✓				
Horticulture Officer	✓		✓				
Asst/Horticulture Inspector			✓			✓	
Director of Agriculture (R & T)	✓	✓	✓				
Joint Director of Agriculture (R & T)	✓		✓				
Research Officer		✓	✓	✓			
Assistant Director of Agriculture (R & T)	✓		✓				
Managing Director, MgSFAC	✓		✓				

Stakeholders	Primary Sector Application						
	Scheme Mgmt.	Supply Chain Management	Service List	Insemination	Crossbreeding	Market Price	1917 iTEAMS Systems
Joint Managing Director, MgSFAC			✓				
Dy. Managing Director, MgSFAC			✓				
SDAO cum Sr. Manager, MgSFAC			✓				
Assistant Director of Agriculture cum Manager, MgSFAC			✓				
Secretary, Regulated Market Committee		✓	✓				
Agriculture Development Officer (Marketing)			✓				
Asstt. Project Engineer			✓				
Director Horticulture	✓	✓	✓				
District Horticulture Officer	✓	✓	✓			✓	
Assistant Director Horticulture		✓	✓				
Assistant Director Agriculture	✓		✓				
Superintendent Engineer Mechanical	✓	✓	✓				
Assistant Agriculture Engineer Mechanical			✓				
Principal BATC		✓	✓				
State Soil Survey Officer			✓				
Secretary Agriculture	✓		✓				
Horticulture Development Officer		✓	✓			✓	
Sub-Divisional Agriculture officer	✓	✓	✓				
District Training Officer		✓	✓	✓			
Program Manager - 1917		✓	✓				✓
Director - MIE	✓	✓	✓				✓
1917 - Team Members							✓

Stakeholders	Primary Sector Application						
	Scheme Mgmt.	Supply Chain Management	Service List	Insemination	Crossbreeding	Market Price	1917 iTEAMS Systems
1917 - Block Executives		✓	✓				✓
Assistant Director ICDP					✓		
Assistant Director Piggery Development	✓	✓					
Sr. Animal Husbandry & Vet Officer		✓		✓	✓		
Sr. Animal Husbandry & Vet Instructor	✓	✓		✓	✓		
Deputy Director Statistics						✓	
Deputy Director Planning	✓	✓				✓	
Deputy Director AHP	✓	✓					
Director (Dairy)			✓	✓			
Assistant Director Poultry Development		✓	✓				
Assistant Director of Fisheries	✓	✓	✓			✓	
Upper Division Assistant	✓		✓				
Lower Division Assistant	✓		✓				
Assistant Engineer		✓	✓				
Fishery Officer	✓	✓	✓			✓	
Superintendent of Fisheries	✓	✓	✓			✓	
Statistical Officer		✓	✓			✓	
Zonal Officer Weaving	✓	✓	✓				
District Sericulture Officer	✓	✓	✓				
District Handloom Officer	✓	✓	✓				
Director Sericulture and Weaving	✓	✓	✓				
Commissioner Secretary Sericulture and Weaving		✓	✓				

Table 17: Future State Application – Stakeholder Matrix

Above list showcases the exhaustive coverage of systems as far as stakeholders are concerned. Below is the list of common systems that is aimed to cover the other aspects of internal functions that drives the department and enable stakeholders to ensure services are well delivered:

Stakeholders	Common Systems					
	State DBT	Learning Mgmt. System	E-Office	TreasuryNET	iOBS	MeghEIS
District Agriculture Officer	✓	✓	✓	✓	✓	✓
Agriculture Development Officer		✓	✓			✓
Director Agriculture	✓	✓	✓	✓	✓	✓
Project Director ATMA		✓	✓	✓	✓	✓
Under Secretary Agriculture	✓		✓		✓	✓
Director Horticulture	✓	✓	✓	✓	✓	✓
District Horticulture Officer	✓	✓	✓	✓	✓	✓
Assistant Director Horticulture			✓			✓
Assistant Director Agriculture			✓			✓
Superintendent Engineer Mechanical			✓			
Assistant Agriculture Engineer Mechanical			✓			
State Soil Survey Officer		✓	✓			
Secretary Agriculture	✓		✓		✓	✓
Secretary MSAMB	✓	✓	✓		✓	✓
Horticulture Development Officer		✓	✓			✓
Principal BATC			✓			✓
Sub-Divisional Agriculture officer	✓	✓	✓	✓	✓	✓
District Training Officer		✓	✓			
Program Manager - 1917		✓	✓			✓
Director - MIE		✓	✓			✓
1917 - Team Members						
1917 - Block Executives		✓	✓			
Assistant Director ICDP	✓		✓	✓	✓	✓
Assistant Director Piggery Development	✓		✓	✓	✓	✓
Sr. Animal Husbandry & Vet Officer	✓	✓	✓	✓		
Sr. Animal Husbandry & Vet Instructor		✓	✓			

Stakeholders	Common Systems					
	State DBT	Learning Mgmt. System	E-Office	TreasuryNET	iOBS	MeghEIS
Deputy Director Statistics		✓	✓	✓	✓	
Deputy Director Planning		✓	✓	✓	✓	
Deputy Director AHP		✓	✓	✓	✓	
Director (Dairy)			✓	✓	✓	
Assistant Director Poultry Development			✓	✓	✓	
Assistant Director of Fisheries			✓	✓	✓	
Upper Division Assistant			✓	✓		✓
Lower Division Assistant			✓	✓		✓
Assistant Engineer		✓	✓			
Fishery Officer	✓	✓	✓	✓		
Superintendent of Fisheries	✓	✓	✓	✓		
Statistical Officer		✓	✓			
Zonal Officer Weaving	✓	✓	✓	✓		
District Sericulture Officer	✓	✓	✓	✓		
District Handloom Officer	✓	✓	✓	✓		
Director Sericulture and Weaving	✓	✓	✓	✓	✓	✓
Commissioner Secretary Sericulture and Weaving			✓		✓	✓

Table 18: Future State Common Systems – Stakeholder Matrix

## 5. Data Architecture

Data Architecture provides means for departments to consistently define their data. It will ensure sharing of information among various departments and external agencies thereby providing opportunities for improved efficiency and effectiveness in Governance. Further, it facilitates increased **collaboration** among departments/agencies and reduce the number of incompatible systems thereby contributing to Government-wide interoperability. It ensures that special attention is given to security and technical requirements of individual data elements so that they are implemented appropriately.

### The Objective of Data Architecture

- Improving the discovery, access and sharing of data among both internal (departments) as well as external stakeholders (citizens, businesses and developers);
- Minimizing the duplicative efforts by capturing the data only once in the system and **connecting** with other systems and capturing only the incremental data as and when required in the business process. Auto-populating of the existing data with due validations would be required;
- Ensuring the accountability for the quality, consistency and security of data;
- Developing shared vocabularies for ensuring common understanding of data;
- Facilitating **collaboration** among departments at all levels of the Government;
- Reducing cost and impact on citizens and businesses because of redundant collection of citizen and/or business data;
- Identifying the technical and security requirements of different data assets;
- Ensuring that notified standards are adopted so that interoperability among applications is ensured.

## 5.1 Current State Assessment

### 5.1.1 Current State Data Entities

There are quite a few systems in Agriculture & Farmers Welfare Department and largely works independently without any data sharing. The Department lacks any data governance processes and is at a risk owing to lack of availability of data retention, data back-up and data sharing policies.

Below is the list of critical data entities along with the system of origin and usage. Please note these data entities are mostly at conceptual level.

Data Entity	Key IT System	Stakeholder Usage
Commodity Prices	<ul style="list-style-type: none"> <li>• Meghalaya Agri Board</li> </ul>	<ul style="list-style-type: none"> <li>• ADO/HDO/AI/HI/DEO at Districts and State HQ</li> </ul>
Farmer Details	<ul style="list-style-type: none"> <li>• 1917iTeams System</li> <li>• Farm Mechanization</li> <li>• Service Plus</li> </ul>	<ul style="list-style-type: none"> <li>• Agriculture &amp; Farmers Welfare Department</li> </ul>
Purchaser Details	<ul style="list-style-type: none"> <li>• 1917iTeams System</li> </ul>	<ul style="list-style-type: none"> <li>• Agriculture &amp; Farmers Welfare Department</li> </ul>

Data Entity	Key IT System	Stakeholder Usage
Farmer Crop Details	<ul style="list-style-type: none"> <li>1917iTeams System</li> </ul>	<ul style="list-style-type: none"> <li>Agriculture &amp; Farmers Welfare Department</li> </ul>
Transport Details	<ul style="list-style-type: none"> <li>1917iTeams System</li> </ul>	<ul style="list-style-type: none"> <li>Agriculture &amp; Farmers Welfare Department</li> </ul>
Machine Details	<ul style="list-style-type: none"> <li>Farm Mechanization</li> </ul>	<ul style="list-style-type: none"> <li>Agriculture &amp; Farmers Welfare Department</li> </ul>
Vendor Details	<ul style="list-style-type: none"> <li>Farm Mechanization</li> </ul>	<ul style="list-style-type: none"> <li>Agriculture &amp; Farmers Welfare Department</li> </ul>
Allotment Details	<ul style="list-style-type: none"> <li>Farm Mechanization</li> </ul>	<ul style="list-style-type: none"> <li>Agriculture &amp; Farmers Welfare Department</li> </ul>
Farmer Land Details	<ul style="list-style-type: none"> <li>Service Plus</li> </ul>	<ul style="list-style-type: none"> <li>Agriculture &amp; Farmers Welfare Department</li> </ul>

Table 19: Current State Data Entities

Currently, the above data is not integrated. The silos exist for different systems and don't have any integration with each other. There are no systems being used in Textiles, Fisheries and AHVT departments. The diagrammatical representation of the same is as below:

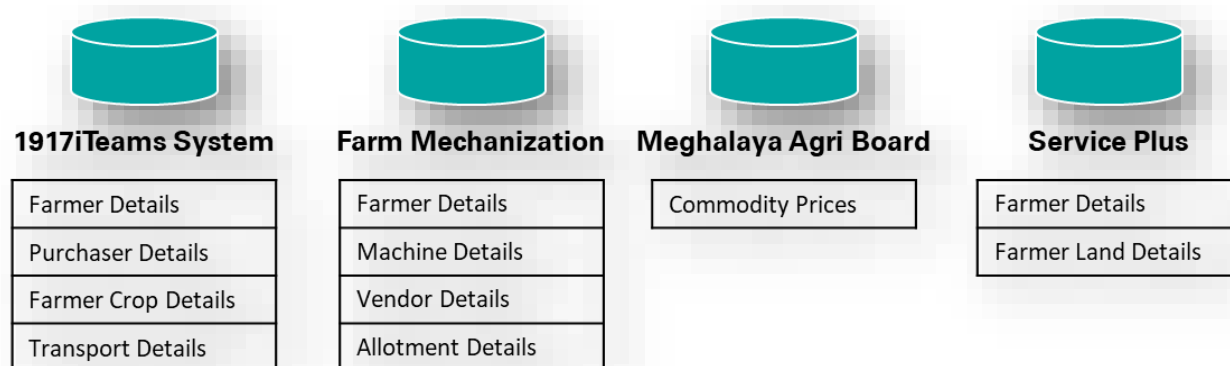


Figure 25: Current State Data Entities - System Map

## 5.2 Challenges and Pain Points

The challenges and pain points of data architecture is categorized as below:

### 5.2.1 Data Design

The data design for systems such as Farm Mechanization, Service Plus, Meghalaya Agri Board have issues with regards to the key aspects such as

- Service Plus (Farmer's Registration) system does not follow State Digital Identity and Farmer's ID data design model. This system's data is not in sync with MeghEA data model
- The database design in 1917teams system and Farm Mechanization does not follow Boyce-Codd Normal Form or Third Normal Form as there are multiple attributes that are redundantly there in the key data tables. This creates duplicated data in the ecosystem. A normalization exercise at database level is required to re-design the database.
- The farmer details are captured in several systems without a plan for synchronization, this would create duplication and data quality issues.
- The data is entered manually by the officer receiving the application form. This would lead to data quality issues because of data entry errors.

### 5.2.2 Data Quality Management

The data quality management involves key aspects of data such as correctness of data, metadata management, data profiling and monitoring quality of data through statistical procedures. Key issues identified are described below:

- Farmers registration is not tagged with Aadhar ID and registration coverage is less than 5% (as of December 2019)
- Unavailability of process related to metadata management, data dictionary documentation, and documentation around data repository has created lacuna in system adoption.
- Data quality dashboard is not built, or no process exists to track quality of data used. This impacts causal analysis and error corrections.

### 5.2.3 Data Life-cycle Management

The data life-cycle management is the process of managing business information throughout its lifecycle, from requirements through retirement. The lifecycle for data crosses different application systems, databases and storage media. The cycle is made up of phases of activity including create, use, share, update, archive, store and dispose.

- Data steward is not defined for Farmers data entity; the relationship between departments and Farmers data does not exist.
- Data entities such as Farmers data, market data, and various others are not mapped to services rather is coupled with systems. Thus, a business justification of data is weak.
- The data attributes, data models, data dictionary and other related documentation does not exist. This has led to issues on management of data.
- Data security requirement is not established, data classification does not exist. This creates a risk of data theft/ loss. Example: Data classification for Farmers data does not exist
- Data centre audit is not performed regularly hence, data storage risk assessment is not executed regularly.

- Disaster recovery site for the state does not exist, this is a key risk especially considering Meghalaya (Shillong) is in a risk-prone earthquake zone.
- Data archival process is not there.

### 5.3 SWOT Analysis of Data Architecture

Analysis Paradigm	Key Pointers	Target State
Strength	Farmer's registration data along with Land and Crop details is captured and available	Retained
	Meta data of common data entities are mostly consistent	Retained
	Historical data on market prices of different commodities is available	Retained
Weakness	Data design has scope of duplication as it does not follow Boyce-Codd normal form (BCNF)	Eliminated
	No mapping of tables through Primary and Foreign keys.	Eliminated
	Unavailability of Master Data Management system	Eliminated
	Unavailability of data warehouse, business intelligence-based capability	Eliminated
Opportunity	Enhancement of data quality, data integration and data management to enhance reporting	Realized
	Introduction of new capabilities – data analytics, data warehouse, data management	Realized
	Introduction of new data entities for digitization of manual processes	Realized
Threats	Duplication of data and inconsistent metadata	Addressed
	Reporting may be hampered due to poor data quality	Addressed
	Non availability of utilization of funds data and stock data under different schemes	Addressed

## 5.4 Primary Sector Metadata

Refer MeghEA: Statewide Detailed Architecture Requirements for Metadata Standard Typology. Addition to the statewide standards, follow standards would be followed in Primary Sector

### Content Related Standards

Standard	Mandatory/ Optional	Reference Link	Remarks
AGMES Document Metadata	Mandatory	AGMES – <a href="http://www.fao.org/3/ae909e/ae909e00.htm">http://www.fao.org/3/ae909e/ae909e00.htm</a>	All documents stored and published from Primary sector department must follow the defined metadata standard.

### Value Related Standards

Standard	Mandatory/ Optional	Reference Link	Remarks
MeghEA Commodity Codes – Harmonized codes for Agriculture	Mandatory	Need to be defined	There is HS 84193100 for agriculture commodity codes. Department needs to evaluate the usage

## 5.5 Data Transformation Plan

### 5.5.1 Data Management and Data Warehouse

Primary Sector Departments would play a significant role in the state data management. Following are the key data entities that would be included as part of the State's master data and transaction data, along with the extraction methodology and frequency. The extracted data would be included in the Data Warehouse.

Data Entity	Data Store (System)	Data Extraction Tool	Master Data	Frequency (Recommended)
Farmer Details	Primary Sector System	ETL	✓	Weekly
Farmer Crop Details	Primary Sector System	ETL	✓	Weekly
Farmer Land Details	Primary Sector System	ETL	✓	Monthly
Equipment Details	Primary Sector System	ETL	✓	Weekly
Vendor Details	Primary Sector System	ETL	✓	Weekly
Allotment Details	Primary Sector System	ETL	✓	Daily
Sales Order	Primary Sector System	ETL		Daily
Service Request	Service Plus	Not Required		Weekly
Medicine Stock Registry	Primary Sector System	ETL	✓	Daily
Location	Common System	ETL		Weekly
Animal Farm	Primary Sector System	ETL	✓	Weekly
Treatment Request Register	Primary Sector System	ETL		Weekly
Animal Register	Primary Sector System	ETL		Weekly
Poultry Register	Primary Sector System	ETL		Weekly
Officer Register	MeghEIS	ETL	✓	Weekly
Stock Register	Primary Sector System	ETL		Daily
Pond Details	Primary Sector System	ETL	✓	Weekly
Scheme Register	Primary Sector System	ETL	✓	Weekly
Service Register	Primary Sector System	ETL		Daily

Table 20: Data Management Requirements Matrix

The data warehouse would follow Enterprise Data Warehouse Model, with ETL used as data extraction tool and Business Intelligence used for visualization of data reports.

### 5.5.2 Data Migration in Primary Sector

As evaluated in Application Architecture, Farm Mechanization and Farmer Registration Service

systems are proposed to be decommissioned and the services would be included in the new proposed system. In such a scenario, it is very essential to protect the master data and data of previous beneficiaries. It is equally important to migrate this data in the required format to the new system. So, the Data of the system would be migrated to Primary Sector system as per below:

Sl. No.	Existing System for Data Migration	New System
1.	Farm Mechanization	Primary Sector System
2.	Farmer Registration Service	Primary Sector System

### 5.5.3 Data Governance in Primary Sector

All departments under primary Sector would have a role to play in each of the stages of the Data Lifecycle for the Scheme (core data entity).

Data, being a key asset of the Government, must be correct, up-to-date, complete and secure (quality data). These requirements are managed by the following roles:

- Data owner
- Data Trustee
- Data Custodian
- Data Steward

For details on the above roles along with data governance responsibilities, please refer Statewide – Detailed Architecture Requirements document.

The Data Steward, Data Custodian and Data Owner for various key data entities are described below:

Data Entity	Data Trustee	Data Steward
Farmers	Respective Department – Deputy Secretary	Respective Department – Joint Secretary
Sales Order	Respective Departments – District Officer/ Farm Superintendent/ AIO/ Farm Manager (Fruit Garden)/ ADA(FP)/ ADA/ Mushroom Regional Training Centre etc.	Respective Departments – Director
Service Request	Respective Departments – District Officer/ Farm Superintendent/ AIO/ Farm Manager (Fruit Garden)/ ADA(FP)/ ADA/ Mushroom Regional Training Centre etc.	Respective Departments – Director
Medicine Stock Registry	AHVT – Director	AHVT – Secretary
Location	Respective Departments – District Officer/ Farm Superintendent/ AIO/ Farm Manager (Fruit Garden)/ ADA(FP)/ ADA/ Mushroom Regional Training Centre etc.	Respective Departments – Director
Animal Farm	AHVT – Director	AHVT –Secretary
Treatment Request Register	AHVT – District Officer	AHVT – Director

Data Entity	Data Trustee	Data Steward
Animal Register	AHVT – District Officer	AHVT – Director
Poultry Register	AHVT – District Officer	AHVT – Director
Officer Register	Finance Department – Joint Secretary	Finance Department – Secretary
Stock Register	Respective Department – District Officer	Respective Department – Director
Pond	Fisheries – District Officer	Fisheries – Director
Scheme Register	Respective Department – Joint Secretary/ Director	Respective Department – Secretary
Service Register	Respective Department – District Officer	Respective Department – Director

Table 21: Data Entity Role Matrix

The Steps for data Quality Management is illustrated in Detailed Architecture Requirements: Data Architecture section of Statewide – Detailed Architecture Requirements document.

## 5.6 Future State

### 5.6.1 Primary Sector Data Architecture

MeghEA data architecture includes various core data entities. The core data entities are those which contain data elements that are most commonly used in the applications of several departments of the Meghalaya Government. The core data entities are listed below:

- Citizen/ Farmer
- Employee
- Things
- GIS
- Business
- Schemes & Policies

**Primary Sector deals with all the core data entities.**

As defined in State-wide Detailed Architecture Requirement document, the data architecture building blocks are defined considering minimalistic approach – to include only those building blocks which are mandatory for the Government of Meghalaya, please refer Statewide – Detailed Architecture Requirements document.

Below diagram illustrates the Digital Registries applicable to Primary Sector (highlighted). Please refer Statewide – Detailed Architecture Requirements document for details of the digital registries

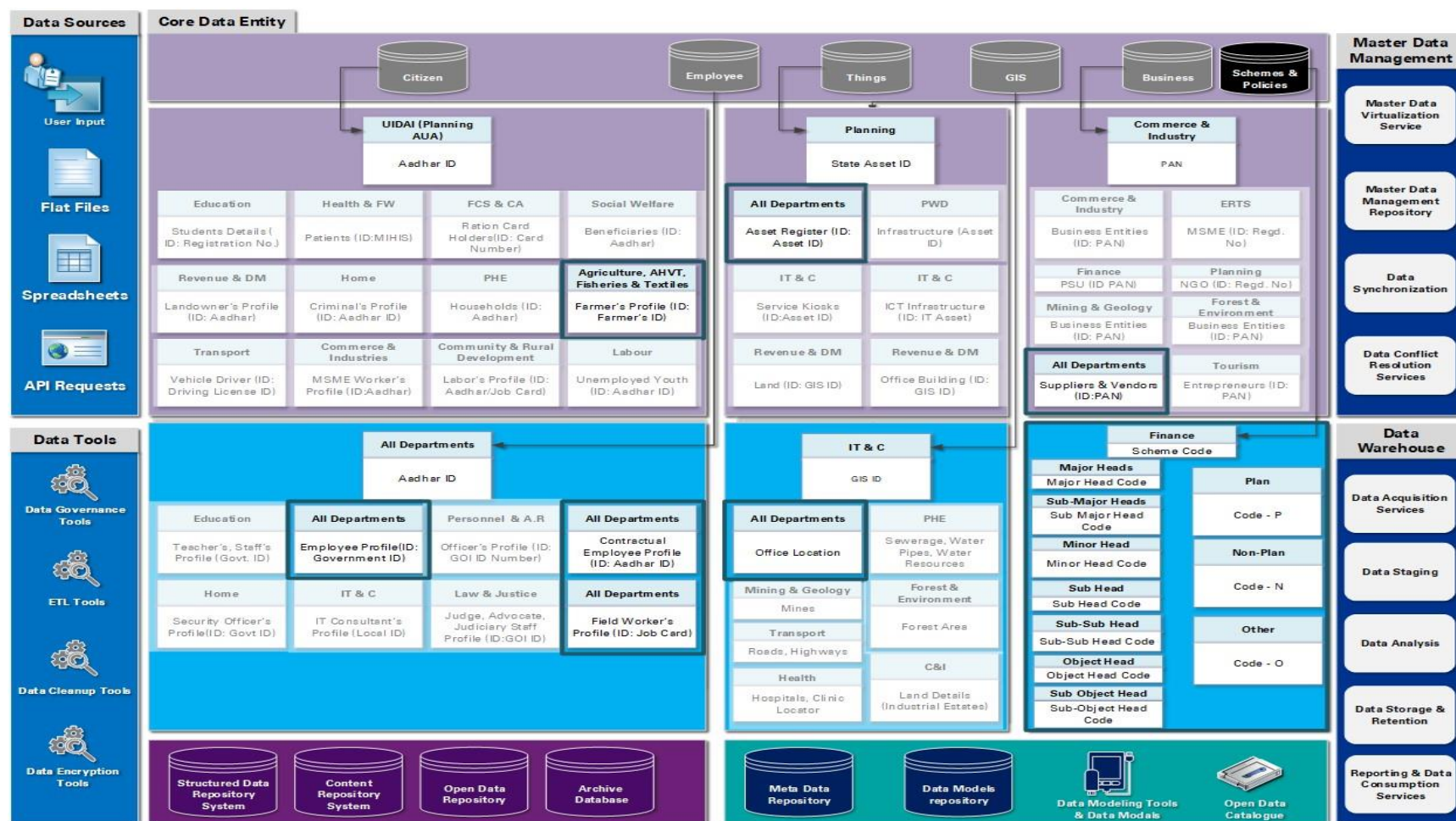


Figure 26: Primary Sector - Digital Registries and Data Tools

## 5.6.2 Conceptual Data Model

**Data Entities:** The data entity is the fundamental building block in the data structure design of the department. An Entity is an abstraction for a Farmer, location, object, event, or concept described (or characterized) by common Attributes.

**Attributes:** An Attribute is a property or characteristic of an Entity. Different instances of an entity may have different values for an attribute.

**Digital Data Source:** A Digital Data Resource is a digital container of information. A Digital Data Resource may correspond to three types of data: “Structured Data Resource”, “Semi-Structured Data Resource”, and “Unstructured Data Resource”.

**Relationship:** Relationship defines the relation with other key entities.

S. No	Entity Name	Description	Attributes	Digital Data Source	Relationship
1	Farmers	The data entity with information related to farmers who wish to OR has been benefited by department through service delivery	<ul style="list-style-type: none"> <li>Digital ID</li> <li>Last Name</li> <li>First Name</li> <li>Location</li> <li>Item Requested</li> </ul>	UIDAI Database	<ul style="list-style-type: none"> <li>Service Request</li> <li>Location</li> <li>Stock Register</li> </ul>
2	Sales Order	The sales order derived basis of service request approval on piglet, chicks, calves, etc.	<ul style="list-style-type: none"> <li>Sales order id</li> <li>Order type</li> <li>Order details</li> </ul>	No any	<ul style="list-style-type: none"> <li>Service Request</li> <li>Location</li> <li>Stock Register</li> <li>Animal Register</li> <li>Poultry Register</li> </ul>
3	Service Request	The service request entity is the high-level model for service plus	<ul style="list-style-type: none"> <li>Sales order id</li> <li>Order type</li> <li>Order details</li> </ul>	Service Plus	<ul style="list-style-type: none"> <li>Farmer</li> <li>Sales Order</li> <li>Officer Register</li> </ul>
4	Medicine Stock Registry	The entity stores information related to stock of: <ul style="list-style-type: none"> <li>Vaccination Kits</li> <li>Medicines</li> </ul>	<ul style="list-style-type: none"> <li>Medicine Kit Type</li> <li>Kit Stock Count</li> <li>Kit Location</li> </ul>	No Any	<ul style="list-style-type: none"> <li>Treatment Register</li> <li>Location</li> </ul>
5	Location	The location entity contains the master data of Meghalaya: <ul style="list-style-type: none"> <li>District</li> <li>Blocks</li> <li>Village/City</li> </ul>	<ul style="list-style-type: none"> <li>District ID</li> <li>Block ID</li> <li>Village ID</li> </ul>	Local Government Directory (LGD)	Multiple entities
6	Animal Farm	The entity stores information related to animals reared in a farm, its location and stock of animals	<ul style="list-style-type: none"> <li>Farm Identifier (ID)</li> <li>Location</li> </ul>	No any	<ul style="list-style-type: none"> <li>Farmer</li> <li>Location</li> <li>Sales Order</li> <li>Animal Register</li> </ul>
7	Treatment Request Register	The entity stores information related to requirement of vaccination, castration, etc for animals in farmer’s farm	<ul style="list-style-type: none"> <li>Treatment Request ID</li> <li>Treatment Type</li> <li>Animal Breed Type</li> </ul>	No any	<ul style="list-style-type: none"> <li>Farmer</li> <li>Medicine Stock Register</li> <li>Officer Register</li> </ul>

S. No	Entity Name	Description	Attributes	Digital Data Source	Relationship
			<ul style="list-style-type: none"> <li>Medicine Kit Type</li> </ul>		
8	Animal Register	The entity contains information related to animals in the various farms	<ul style="list-style-type: none"> <li>Animal Type</li> <li>Breed</li> <li>Farm ID</li> </ul>	No any	<ul style="list-style-type: none"> <li>Animal Farm</li> <li>Farmers</li> <li></li> </ul>
9	Poultry Register	The entity contains information related to chickens and eggs in the various poultry farms	<ul style="list-style-type: none"> <li>Poultry ID</li> <li>Location</li> </ul>	No any	<ul style="list-style-type: none"> <li>Location</li> <li>Sales Order</li> </ul>
10	Officer Register	The entity contains information related to roles, designation and location of department officers	<ul style="list-style-type: none"> <li>Employee ID</li> <li>Designation ID</li> <li>Role ID</li> <li>Location</li> </ul>	No any	<ul style="list-style-type: none"> <li>Service Request</li> <li>Treatment Register</li> <li>Location</li> </ul>
11	Stock Register	The entity contains information related to items meant for distribution to farmers.	<ul style="list-style-type: none"> <li>Item ID</li> <li>Scheme ID</li> <li>Item Quantity</li> <li>Item Name</li> </ul>	No any	<ul style="list-style-type: none"> <li>Location</li> <li>Scheme</li> <li>Service Request</li> </ul>
12	Pond	The entity contains information related to farmer's pond.	<ul style="list-style-type: none"> <li>Pond ID</li> <li>Digital ID (Farmer ID)</li> <li>Beneficiary Type</li> <li>Asset Type</li> <li>Water Area (Ha)</li> <li>Location</li> <li>Address</li> <li>Source of Water</li> </ul>	No any	<ul style="list-style-type: none"> <li>Farmer</li> <li>Location</li> </ul>
13	Scheme Register	The entity contains information related to schemes being offered.	<ul style="list-style-type: none"> <li>Scheme ID</li> <li>Service ID</li> <li>Scheme Funding</li> </ul>	No any	<ul style="list-style-type: none"> <li>Service Register</li> <li>Service Request</li> </ul>
14	Service Register	The entity contains information related to services being offered.	<ul style="list-style-type: none"> <li>Service ID</li> <li>Service Name</li> <li>Service Eligibility</li> <li>Service Description</li> </ul>	No any	<ul style="list-style-type: none"> <li>Scheme Register</li> <li>Service Request</li> </ul>

Table 22: Primary Sector – Conceptual Data Model

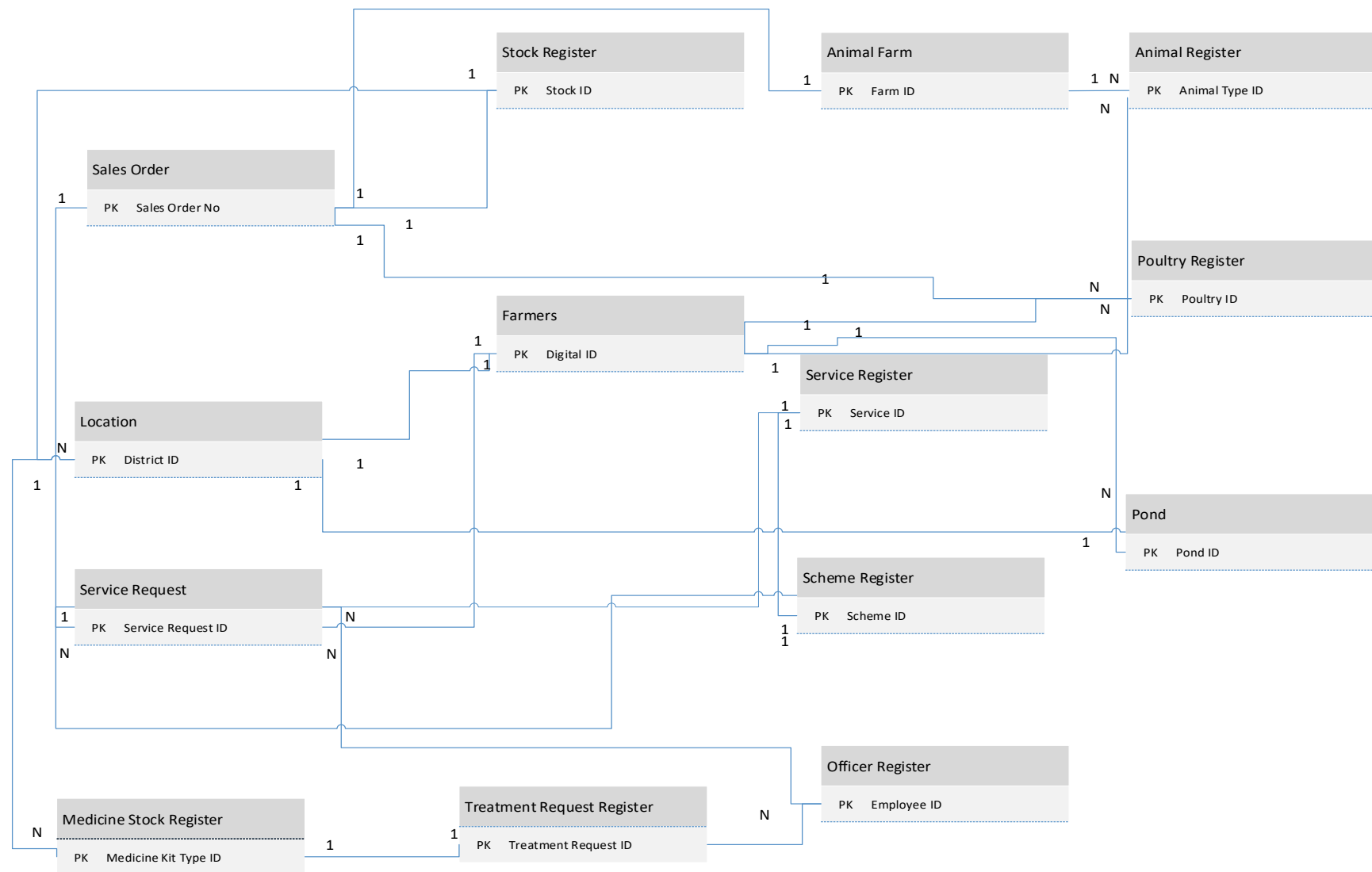


Figure 27: Primary Sector Conceptual Data Model

### 5.6.3 Logical Data Model

A logical data model is a holistic representation of the 'in scope' of business entities, their relationships, and their attributes. It is used to provide a detailed description of the data requirements and needs in support of the 'in-scope' business activities irrespective of the physical implementation environment or performance considerations.

The new data entities discussed above have been further detailed to include in Logical Data Model. It is also to be noted that the data entity detailing may change upon further analysis of the requirement.

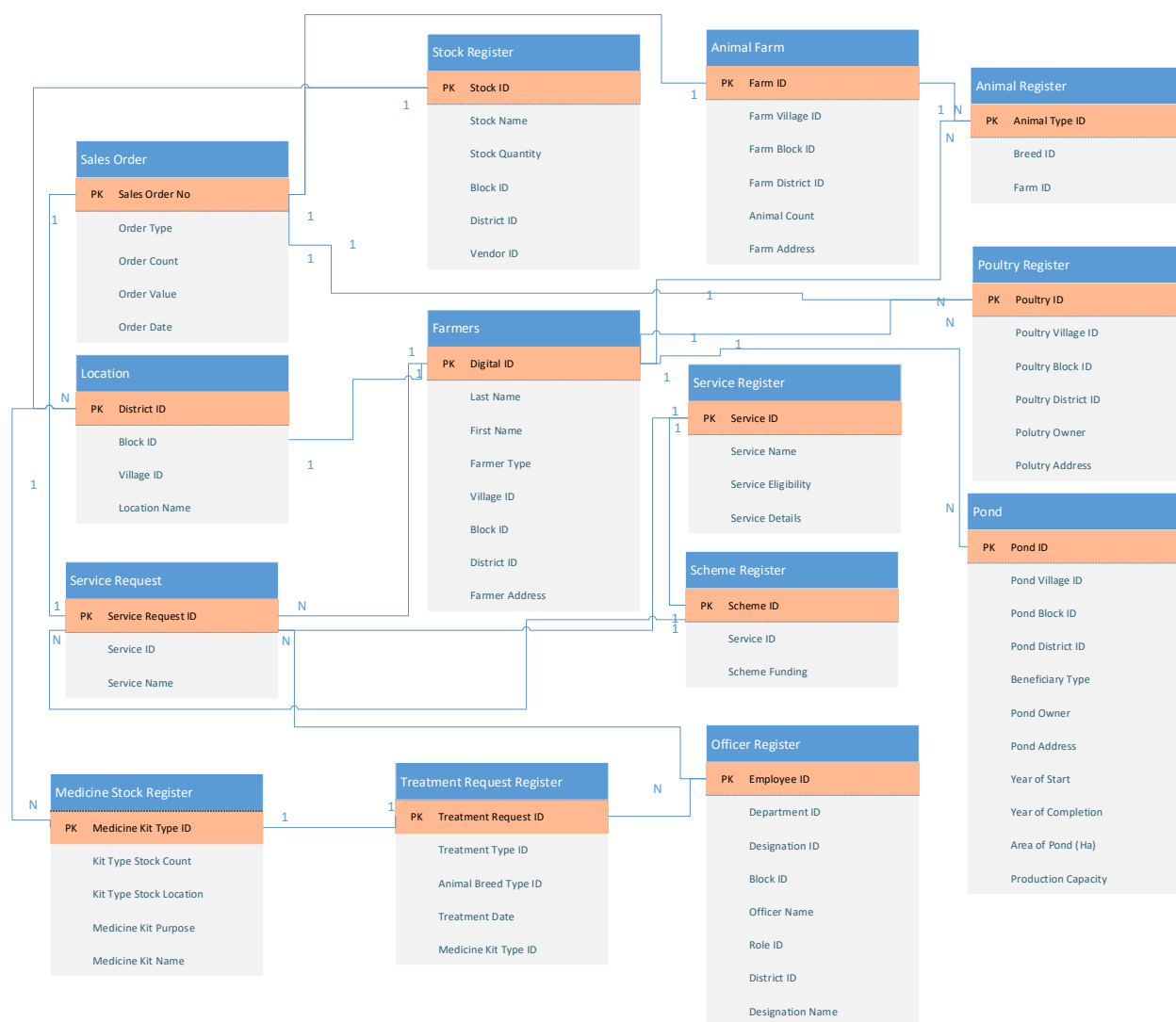


Figure 28: Logical Data Model

### 5.6.4 Service and Data Mapping

As we had observed in the earlier section, there are not many systems in Primary Sector and hence, minimum data. These data are stored in system specific databases. As a part of the transformation,

data entities need to be created and these data entities would be stored in new systems. It is imperative to understand the services that these new data entities would create. This would ensure establishment of a structure for data management and development of new systems.

Data Entity	Data Store (System)	Created By	Modified By	Used By
Farmers	Primary Sector System	First service availed by Farmer	No Modification Allowed	All services related to farmers
Sales Order	Primary Sector System	<ul style="list-style-type: none"> <li>•All product selling services</li> <li>•All input distribution services</li> </ul>	No Modification Allowed	Reporting Services
Service Request	Service Plus	All services	Every service delivery step	The applied service and tracking services
Medicine Stock Registry	Primary Sector System	Procurement of Medicines	On receipt of new stock and consuming stock on providing service	Treatment Services
Location	Master Database	Administrator based on LGD Codes	As per LGD directives	All Services
Animal Farm	Primary Sector System	AHVT Officer at District level	AHVT Officer at District level	All AHVT Services
Treatment Request Register	Primary Sector System	All Treatment services	Every service delivery step	The applied service and tracking services
Animal Register	Primary Sector System	Animal Farm	On receipt of new stock and consuming stock on providing service	All distribution and sale services
Poultry Register	Primary Sector System	Procurement Related services	On receipt of new stock and consuming stock on providing service	All services related to Poultry
Officer Register	MeghEIS	On recruitment	Finance Department	All service workflows
Stock Register	Primary Sector System	Procurement Related services	On receipt of new stock and consuming stock on providing service	All distribution and sale services
Pond	Primary Sector System	Fisheries Farmer Application for Infrastructure	All fisheries services	Relevant fisheries services

Data Entity	Data Store (System)	Created By	Modified By	Used By
		Development Assistance		
Scheme Register	Primary Sector System	Department Administrator	On instructions from State Government/Centre Government	All services under that scheme
Service Register	Primary Sector System	Department Administrator	On instructions from State Government/Centre Government	All services

Table 23: Primary Sector Service Data Mapping

The above table shows data flow in Primary Sector. A data flow is a path for data to move from one part of the IT system to another. The above is tentative and may be revised at time of implementation.

## 6. Technology Architecture

Technology Architecture depicts the layout of the technology foundation of ICT-based systems to be designed for delivery of identified business services. Technology Architecture lists all the components of the technology system on an end-to-end basis, including IT Infrastructure, Applications, Access Devices, Communication Systems and Service Delivery modes. It further defines the currently applicable open standards for all the solution building blocks and components and identifies the Open Source Products for each technology component.

### 6.1 Current State Assessment

Current state assessment is an important aspect to understand the infrastructure components available and can be used. The infrastructure available for Primary Sector is assessed in further sections.

#### 6.1.1 Environments and Locations

Environment and location components includes all the IT infrastructure needed for deployment with respect to production environment for as-is and future state.

The following table provide the current technology stack Primary Sector applications already available:

Application Name	Application Platform	Operating System	Database	Software License Status
Meghalaya Agri Board System	MS.Net 4.0 with C#	Windows	SQL Server 2012	SQL Server 2019 released
Farm Mechanization	MS.Net 4.0 with C#	Windows	SQL Server 2012	SQL Server 2019 released
eDistrict (Service Plus)	Not Known (Developed by NIC Delhi)	Not Known (Developed by NIC Delhi)	Not Known (Developed by NIC Delhi)	Not Known (Developed by NIC Delhi)
1917 iTEAMS	PHP	Not Known (Cloud)	MySQL	Not Known (Developed and Managed by DIC)

Table 24: Primary Sector Current Technology Stack

#### 6.1.2 IT Infrastructure

Following systems are hosted at Mini Data Centre maintained by NIC Meghalaya:

- Meghalaya Agri Board System
- Farm Mechanization

The existing infrastructure components and their locations are provided below;

Infrastructure ID	Infrastructure Component Type	Application/ application component	Make, Model,	Data Centre	Infrastructure Challenges
NIC-WEB-02	Web Server	Meghalaya Agri Board System	HP ProLiant BL460C	NIC	End of Life
NIC-WEB-02	Web Server	Farm Mechanization	HP ProLiant BL460C	NIC	End of Life

Table 25: Existing Infrastructure Components

The availability of desktops and laptops in various service delivery centres:

- Head Office: 21 Desktops available in Head Office of Department of Agriculture.
- District (Department Offices): There are 79 Desktops available in Districts out of which, major portion has been allocated to HQ, Shillong and Tura. The details of the hardware available in Primary Sector are as below:

Year	Desktop			Printers		
Location	HQ	District	Block	HQ	District	Block
2015-16	3	40	0	0	2	0
2016-17	33	0	11	2	0	0
2017-18	11	5	8	2	0	0
2018-19	7	1	21	0	1	16
<b>Total</b>	<b>54</b>	<b>46</b>	<b>40</b>	<b>4</b>	<b>3</b>	<b>16</b>

Table 26: Existing Hardware Details

### 6.1.3 Network

The primary network for the service delivery centres is NICNET, the secondary network of Meghalaya SWAN is outdated and mostly non-operational. The network details for blocks are not available hence not included in the document.

## 6.2 Challenges and Pain Points

The critical challenges and points have been captured under the following categories:

- **Unavailability/Outdated IT Infrastructure:** The tools and technologies that are missing and are required considering the reference technology model. The IT infrastructure that have crossed the end of life; and have issues related to support and maintenance.
- **Network:** The availability of uninterrupted primary and secondary network is critical for the working of departments under Primary Sector. The key challenges with respect to network is discussed under this consideration.

### 6.2.1 Unavailability/Outdated IT Infrastructure

The infrastructure on which the applications/ portals of departments in primary sector are deployed has been analysed and the gaps has been identified. The details identified are listed below:

Application Name	User Departments/ Function	Gaps
Meghalaya Agri Board System	Meghalaya Agri Board	Crystal Server infrastructure needs immediate upgrade.
Farm Mechanization	Directorate of Agriculture	Crystal Server infrastructure needs immediate upgrade.

Table 27: Infrastructure Gaps

### 6.2.2 Network Challenges

Network is a critical area and Meghalaya Government have several issues with respect to the network. Below are the key challenges Meghalaya is facing in terms of network.

#### Key Issues:

- Unavailability of network (Primary and Secondary) in many blocks.
- Unavailability of secondary network in some districts.
- Network audit is not carried out
- Network devices are not assessed, no inventory exists in the state data centre.

### 6.2.3 Consolidated Challenges

Below is a list of key challenges as observed in the Technology Architecture assessment phase

S. No	Challenges
1	Few critical hardware/software components have crossed end of life; hence, needs upgrade in near term.
2	Unavailability of primary network in some blocks and secondary network at many places leads to severe impact in normal operations.
3	Department do not have proper back up database, data archival, database clustering, data management and there is no backup policy.
4	State lacks tools for monitoring of application and network. Tools for access rights, performance monitoring, and utilization monitoring are required.

S. No	Challenges
5	State do not have proper IT asset Management, Software licenses management, access management, Asset management etc.
6	Notable errors/ issues have been observed in systems – the causal analysis for the same has not been performed.
7	Analytics capability is limited owing to unavailability of data analytics specialized software

Table 28: Technology Architecture – Key Challenges

### 6.3 SWOT Analysis of Technology Architecture

Analysis Paradigm	Key Pointers	Target State
Strength	Desktop availability in Districts and Blocks	Retained
	Network Availability in most Districts and some Blocks	Retained
Weakness	Outdated infrastructure	Recommendations for infrastructure modernization
	Availability of uninterrupted network in all offices	Recommendations Provided
Opportunity	Availability of Field officers/ staff can be leveraged to deliver services through tablets/ mobile apps.	Realized
Threats	Unavailability of systems due to network outages	Addressed
	Risk of system outages owing to outdated infrastructure	Addressed
	Security lapses in current architecture.	Addressed

## 6.4 Future State

### 6.4.1 New Requirement Specifications

The new technology component listed below along with High-level specifications based on number of users and volume of expected transactions.

Equipment / component /supply/works	Qty. at Primary Site	Qty. at DR Site	Remarks
Primary Sector System DB Server	1	1	LBS (Load Balancer Switch) & FOS (Fail Over Switch) at SDC (State Data Centre) between SDC & DR (Disaster Recovery), with licenses
Primary Sector System App Server	1+1	1	LBS & FOS at SDC between SDC & DR, with licenses
IAM / WAM Software (including SSO and associated software components [e.g. application server, web server etc.] if any) with 40 Core perpetual license	1	1	
Directory Service per Instance/Node basis	1	1	High Availability Scalability: High Scalability to store minimum 20 Million user records Support for 64-bit Architecture
IAM/WAM Server	1+1	1	LBS & FOS at SDC between SDC & DR, with licenses
IAM/WAM DB Server	1+1	1	LBS & FOS at SDC between SDC & DR, with licenses

Table 29: New Requirement Specifications

In addition to above, there will be infrastructure requirement based on the roles of the officers in Primary Sector. Below are the tentative infrastructure requirements for each role:

Department Officers	Point of Sale System	Desktop	Mobile Device	Biometric Device	Barcode Scanner
District Agriculture Officer	✓	✓		✓	✓
Block Development Officer	✓	✓		✓	✓
Director Agriculture		✓			
Under Secretary Agriculture		✓			
Director Horticulture		✓			
District Horticulture Officer	✓	✓			
Assistant Director Horticulture		✓			
Assistant Director		✓			

Department Officers	Point of Sale System	Desktop	Mobile Device	Biometric Device	Barcode Scanner
Agriculture					
Financial Accounts Officer		✓			
Superintendent Engineer Mechanical		✓			
Assistant Agriculture Engineer Mechanical		✓			
State Soil Survey Officer		✓	✓		
Agriculture Development Officer		✓	✓	✓	✓
Independent Circle Offices		✓	✓	✓	✓
Secretary Agriculture		✓			
Government Farms	✓				✓
Fisheries District Officer		✓			
AHVT Officer	✓	✓			
Zonal Officer Weaving		✓			
District Sericulture Officer		✓	✓	✓	✓
District Handloom Officer		✓	✓	✓	✓
Director Sericulture and Weaving	✓	✓	✓	✓	✓
Commissioner Secretary Sericulture and Weaving		✓			

Table 30: Infrastructure Requirements

### Key Changes

- Deployment of Enterprise Service Bus and API gateway for effective integration. Re-architecture of systems to SOA/ MSA based architecture
- Re-architecture of Meghalaya Agri Board Portal and Farm Mechanization portals to modern architecture. Development of Primary Sector System accessible through common state portal.
- Implementation of data back-up and disaster recovery mechanism, implementation of DR drills.
- Implementation of analytics software.
- Server virtualization at SDC.

- Implementation of tools for access rights, performance monitoring, and utilization monitoring.
- Implementation of SSO components.

## 7. Security Architecture

Meghalaya state government has been planned its services online through web and mobile interfaces. This may open a boulevard for multiple threats to access the information, systems, and assets to be viewed and/or altered unauthorized to harm the services, applications or the departments. This points out the importance of defining and implementing policies, processes, controls for information security.

### 7.1 Current State Assessment, Challenges and Pain Points

There are only 2 application portals in Agriculture & Farmers Welfare department with very limited functionalities. There are no security audits conducted for the applications. The functionality of the application portals has been covered in application architecture. The major challenges have been captured as below:

- There is no backup of the servers which are already out of warranty thus there is always threat of data loss in case of server failure.
- No defined anti-virus policy exists. Users laptops and devices are not covered under any anti-virus policy.
- Currently no such domain policy exists in Meghalaya Government.
- Single-Sign-On and OAuth2 does not exists.
- Currently, Authentication and Authorization is system-role based. Hence, it is not uniform. Accounting of information actions is not captured.
- There is no session management policy in Primary Sector departments.
- Absence of regular third-party auditing has created lacuna in security threat management. OWASP based security assessment are not carried out.
- Identity and Access management is implemented at data level.
- Data is currently not classified.
- No data recovery policy exists. DR Site is not operational.

## 7.2 SWOT Analysis of Security Architecture

Analysis Paradigm	Key Pointers	Target State
Strength	Multi-factor authentication for approvals using DSC	Retained
	Security audit process exists in Mini Data Centre	Retained
Weakness	System level security and user profiling; lack of availability of SSO	SSO recommended
	State Data Centre is non audit compliant	Recommendations Provided
Opportunity	Single-Sign-On	Recommended
Threats	Vulnerability to security threats	Recommendations Provided

## 7.3 Future State

### 7.3.1 Access Requirement

The various modules in Primary Sector would need varied accesses. Please follow the table below for the security requirement:

Module-> User	Inbox	Apply Financial Assistance	Get Information	Apply for Inputs	Market Connect	Apply for Training	Request Treatment Appointment	Request Artificial Insemination
Farmers	✓	✓	✓	✓	✓	✓	✓	✓
Buyer	✓				✓			
Vendor	✓				✓			
NGO	✓	✓				✓		
Module-> User	Inbox	Scheme Mgmt.	Stock Mgmt	Supply Chain Mgmt.	Price & Trends	1917iteams System	Crossbreeding	Insemination
Dept. Sec.	✓	✓	✓	✓	✓			
Director	✓	✓	✓	✓	✓	✓		
ADO	✓	✓	✓	✓	✓	✓		
Agri Field Officer	✓			✓	✓			
BDO	✓	✓	✓	✓	✓	✓		
BHO								
HDO	✓	✓	✓	✓	✓	✓		
AHVT Doctors	✓	✓	✓	✓		✓	✓	✓
Fisheries Field Officer	✓	✓	✓	✓				
Sericulture Officer	✓	✓	✓	✓		✓		
Finance Dept. User		✓						

The access to various modules should be allowed based on the roles of the particular stakeholder. Cross-breeding and insemination module should be allowed to be accessed by only AHVT doctors and AHVT farmer for seeking appointment. Thus, there is a need to identify correct farmer and correct role. For implementing the same, identify and access management plays a vital role.

Finance department play a role of allocating funds to the department schemes as per requirements of the state thus should be allowed access only to Scheme Management module.

Agriculture Field Officers are allowed to conduct verification and capture Daily/ Weekly/ Monthly/ Fortnightly Market Price Data thus only modules related to Price & Trends and Supply Chain Management.

### 7.3.2 Data Classification

Please refer Statewide – Detailed Architecture Requirements document, Detailed Architecture Requirements – Security section for details on the data classification categories

The data related to Primary Sector has been classified as per below:

Data Entity	Data Classification	Securing data at rest	Securing data in transit	Data encryption	Data quality	ETL Security	Data Loss Prevention
Scheme Details	Public	✓	✓				✓
Scheme Eligibility	Public	✓	✓				✓
Scheme Funding	Official	✓	✓				✓
Stock Details	Official	✓	✓				✓
Fund Details	Official	✓	✓				✓
Approving Authority	Public	✓	✓				✓
Beneficiary Details	Private	✓	✓				✓
User Profile	Confidential	✓	✓	✓	✓	✓	✓
Inspection Officer	Public	✓	✓				✓
Sale Details	Official	✓	✓	✓	✓	✓	✓
Vendor Details	Official	✓	✓				✓
Order Details	Private	✓	✓	✓	✓	✓	✓
Distribution Details	Official	✓	✓				✓
Vaccination Details	Public	✓	✓		✓	✓	✓

Data Entity	Data Classification	Securing data at rest	Securing data in transit	Data encryption	Data quality	ETL Security	Data Loss Prevention
Insemination Details	Private	✓	✓	✓	✓	✓	✓
Farm Details	Public	✓	✓				✓
Pond Details	Public	✓	✓				✓
POS Details	Public	✓	✓				✓

Table 31: Primary Sector Data Classification

## 8. Architecture Realization

### 8.1 Mission Realization

As part of realization, it's important that the mission defined is realized. The mission defined for Primary Sector is to achieve 6A i.e. to achieve Aware, Avail, Aspire, Associate, Accelerate and Achieve. Effort has been made to realize the mission by clearly defining the eligibility criteria for the services and providing **awareness** to farmers through online modes on service eligibility and intended benefits. Further, the services are proposed to be made digital to the extent possible to enable farmers **avail** them at their convenience. Introduction of better farming techniques in agriculture, animal husbandry, fisheries and textiles to increase production and productivity and ensure food security and **aspire** better produce. There are services to **associate** farmers to the purchasers nearest to them for selling their produce. The motive is to make those services digital to ensure system driven connects and radially available information. The information services are made online to ensure timely and **accelerate** information to enable farmers take right decisions. Finally, all the services collectively are delivered in collaboration with all departments in primary sector to ensure farmers **achieve** better livelihood.

The service realization has been explained further in below sections.

### 8.2 Service Realization Model

The sections above have described the services, processes within the service and the need for capability increment to enhance service delivery. The current section mainly covers the business use cases needed to support the service delivery, a business use case model is a model that describes the processes of a business and their interactions with external parties like beneficiaries and stakeholders.

Following sub-section describes the business use cases along with the key activities to be undertaken within the service and re-usable architecture building blocks. The prioritized services are explained below:

#### 8.2.1 Provide Training and Awareness to Farmers

- **Strategic Indicators:**
  - Farmers with surplus production to sell in the open market.
  - Rice, wheat and coarse cereals produced annually per unit area (kg/Ha).
  - Percentage growth in average income of small-scale food producers, by sex and indigenous status.
  - Growth (percentage) in gross Agriculture expenditure Y-o-Y.
  - Ratio of chemical fertilizers sold to ratio of crop production.
  - Per-capita milk yield per milk animal.
  - Per capita meat production.
  - Per capita egg production.
- **Use Case Steps:** Farmers applies for training under different schemes.

- **Key Activities:** As per need, farmers apply for the training through digital platform by providing various details for improving farming techniques, more production, scientific methods, etc.
- **Architecture Building Blocks:** Workflow.
- **Use Case Steps:** Make batches and publish schedule of training.
  - **Key Activities:** District/ Block wise consolidation of farmers with similar training needs and preparation of training schedule. The batch details are notified to the applicant farmers through SMS and app notifications.
  - **Architecture Building Blocks:** Workflow, Messaging.
- **Use Case Steps:** Arrange trainer and provide training.
  - **Key Activities:** Trainer is arranged by District Officer, and training is delivered to the farmers on scheduled batch date and time.
  - **Architecture Building Blocks:** Learning Management System, Messaging, Workflow.

## 8.2.2 Financial Assistance for Establishment of Agriculture Infrastructure

- **Strategic Indicators:**
  - Farmers with surplus production to sell in the open market.
  - Percentage growth in average income of small-scale food producers, by sex and indigenous status.
  - Growth (percentage) in gross Agriculture expenditure Y-o-Y.
  - Percentage of growth of export subsidy to agriculture exports.
  - Gross Global Food Loss Index (GFLI) in metric tons.
- **Use Case Steps:** Funds received from Finance for Infrastructure Development.
  - **Key Activities:** Funds are received from Finance for implementation of infrastructure development schemes.
  - **Architecture Building Blocks:** Financial Management.
- **Use Case Steps:** Funds transferred to line departments/ districts.
  - **Key Activities:** Funds are transferred to line departments or district offices for implementation of scheme/ infrastructure development.
  - **Architecture Building Blocks:** Workflow, Financial Management, TreasuryNet.

## 8.2.3 Distribution of Seeds to Farmers

- **Strategic Indicators:**
  - Farmers with surplus production to sell in the open market.
  - Percentage growth in average income of small-scale food producers, by sex and indigenous status.
  - Increase in Agriculture orientation index.
- **Use Case Steps:** Farmers applies for seeds under different schemes.
  - **Key Activities:** As per farming needs and area of cultivation land, farmers apply for the seeds through digital platform by providing various details.
  - **Architecture Building Blocks:** Workflow.
- **Use Case Steps:** Checking of Eligibility and Stock.
  - **Key Activities:** System/ District/ Block officer checks eligibility and stock of that particular seeds and provide approval. The details of distribution schedule are notified to the applicant farmers through SMS and app notifications.

- Architecture Building Blocks: Workflow, Messaging.
- **Use Case Steps**: Distribution of Seeds.
  - Key Activities: Seeds are provided as per pre-defined schedule intimated to farmer through notification/ SMS.
  - Architecture Building Blocks: Messaging, Workflow.

## 8.2.4 Financial Assistance for Purchase of Machinery

- **Strategic Indicators**:
  - Percentage growth in average income of small-scale food producers, by sex and indigenous status.
  - Increase net cropping intensity (Cropping intensity refers to raising of a number of crops from the same field during one agricultural year; it can be expressed through a formula.  $\text{Cropping Intensity} = \text{Gross Cropped Area} / \text{Net Sown Area} \times 100$ ).
  - Growth (percentage) in gross Agriculture expenditure Y-o-Y.
- **Use Case Steps**: Farmers applies for financial assistance to purchase machinery under different schemes.
  - Key Activities: As per farming needs and area of cultivation land, farmers apply for the financial assistance through digital platform by providing various details.
  - Architecture Building Blocks: Workflow.
- **Use Case Steps**: Checking of Scheme Eligibility for applicant and Funds under the scheme.
  - Key Activities: System/ District/ Block officer checks eligibility of farmer and funds of that particular machinery under scheme and provide approval. The details are notified to the applicant farmers through SMS and app notifications.
  - Architecture Building Blocks: Workflow, Messaging.
- **Use Case Steps**: Funds transferred to beneficiary account.
  - Key Activities: As per eligibility, bill will be generated, and funds will be transferred to bank account of farmer through TreasuryNet system. Applicants will be notified through SMS and app notifications.
  - Architecture Building Blocks: Messaging, Workflow, Financial Management.

## 8.2.5 Daily Market Price Information on Agriculture/Horticulture Commodities

- **Use Case Steps**: Field officer visits market.
  - Key Activities: Field officer visits market as per schedule and collect prices for different commodities and enter in Mobile application.
  - Architecture Building Blocks: Workflow.
- **Use Case Steps**: Collation of Information.
  - Key Activities: The prices are averaged at district level and state level by the system and displayed on the Web Site. The beneficiary simply opens the particular link on the State Portal to view relevant prices. Registered users will be notified through SMS/ App Notifications for daily price of the subscribed commodities.
  - Architecture Building Block: Messaging.

## 8.2.6 Testing of seed samples collected from the farmers

- **Strategic Indicators**:
  - Farmers with surplus production to sell in the open market.

- **Use Case Steps:** Farmers applies for testing of seed samples.
  - **Key Activities:** Farmer applies for seed sample testing through digital platform and sample is collected on scheduled date and time by field officer.
  - **Architecture Building Blocks:** Workflow.
- **Use Case Steps:** Sample sent to Testing Lab.
  - **Key Activities:** Samples collected are sent to testing lab for the results of testing.
  - **Architecture Building Blocks:** Workflow.
- **Use Case Steps:** Communication of Results.
  - **Key Activities:** The report of testing of seed samples is uploaded into system. The sample results are intimated to farmer through email and message/ mobile app notification.
  - **Architecture Building Blocks:** Messaging, Workflow.

## 8.2.7 Providing Inputs to Farmers

- **Strategic Indicators:**
  - Farmers with surplus production to sell in the open market.
  - Rice, wheat and coarse cereals produced annually per unit area (kg/Ha).
  - Percentage growth in average income of small-scale food producers, by sex and indigenous status.
  - Increase net cropping intensity (Cropping intensity refers to raising of a number of crops from the same field during one agricultural year; it can be expressed through a formula.  $\text{Cropping Intensity} = \frac{\text{Gross Cropped Area}}{\text{Net Sown Area}} \times 100$ ).
  - Increase in Agriculture orientation index.
  - Growth (percentage) in gross Agriculture expenditure Y-o-Y.
  - Ratio of chemical fertilizers sold to ratio of crop production.
- **Use Case Steps:** Farmers applies for inputs under different schemes.
  - **Key Activities:** As per farming needs and area of cultivation land, farmers apply for the inputs through digital platform by providing various details.
  - **Architecture Building Blocks:** Workflow.
- **Use Case Steps:** Checking of Eligibility and Stock.
  - **Key Activities:** System/ District/ Block officer checks eligibility and stock of that particular inputs under the scheme and provide approval. The schedule details are notified to the applicant farmers through SMS and app notifications.
  - **Architecture Building Blocks:** Workflow, Messaging.
- **Use Case Steps:** Distribution of Inputs.
  - **Key Activities:** Inputs are provided as per pre-defined schedule intimated to farmer through notification/ SMS.
  - **Architecture Building Blocks:** Messaging, Workflow.

## 8.2.8 Financial Assistance for Production Activities

- **Strategic Indicators:**
  - Growth (percentage) in gross Agriculture expenditure Y-o-Y.
  - Percentage of growth of export subsidy to agriculture exports.
- **Use Case Steps:** Farmers applies for financial assistance for production activities under different schemes.

- **Key Activities:** As per farming needs and area of cultivation land, farmers apply for the financial assistance through digital platform by providing various details.
- **Architecture Building Blocks:** Workflow.
- **Use Case Steps:** Checking of Eligibility and Funds.
  - **Key Activities:** System/ District/ Block officer checks eligibility and funds of that particular production activity under scheme and provide approval. The approval details are notified to the applicant farmers through SMS and app notifications.
  - **Architecture Building Blocks:** Workflow, Messaging.
- **Use Case Steps:** Funds transferred to beneficiary account.
  - **Key Activities:** As per eligibility, funds will be transferred to bank account of farmer through TreasuryNet system.
  - **Architecture Building Blocks:** Messaging, Workflow, Financial Management.

## 8.2.9 Distribution of Machineries and Equipments

- **Strategic Indicators:**
  - Farmers with surplus production to sell in the open market.
  - Percentage growth in average income of small-scale food producers, by sex and indigenous status.
  - Increase net cropping intensity (Cropping intensity refers to raising of a number of crops from the same field during one agricultural year; it can be expressed through a formula.  $\text{Cropping Intensity} = \frac{\text{Gross Cropped Area}}{\text{Net Sown Area}} \times 100$ ).
  - Increase in Agriculture orientation index.
  - Ratio of chemical fertilizers sold to ratio of crop production.
- **Use Case Steps:** Farmers applies for Machinery/ Equipment under different schemes.
  - **Key Activities:** As per farming needs and area of cultivation land, farmers apply for the Machinery/ Equipment through digital platform by providing various details.
  - **Architecture Building Blocks:** Workflow.
- **Use Case Steps:** Checking of Eligibility and Stock.
  - **Key Activities:** System/ District/ Block officer checks eligibility and stock of that particular Machinery/ Equipment and provide approval. The schedule details are notified to the applicant farmers through SMS and app notifications.
  - **Architecture Building Blocks:** Workflow, Messaging.
- **Use Case Steps:** Distribution of Machinery/ Equipment.
  - **Key Activities:** Machinery/ Equipment are provided as per pre-defined schedule intimated to farmer through notification/ SMS.
  - **Architecture Building Blocks:** Messaging, Workflow.

## 8.2.10 Information Services under Agri/Hort Information Scheme

- **Strategic Indicators:**
  - Percentage growth in average income of small-scale food producers, by sex and indigenous status.
- **Use Case Steps:** Farmers visits mobile app/ department web portal for information.
  - **Key Activities:** Farmer opens portal/ mobile app and register himself for regular information alerts.
  - **Architecture Building Blocks:** Workflow.

- **Use Case Steps:** State/ District Officer provides information alerts.
  - **Key Activities:** the information officer keeps pushing informational alerts to farmers as per weather, season, needs etc. The details are notified to the applicant farmers through SMS and app notifications.
  - **Architecture Building Blocks:** Workflow, Messaging.

### 8.2.11 Income support to farmers through Pradhan Mantri Kisan Samman Nidhi (PMKISAN)

- **Strategic Indicators:**
  - Growth (percentage) in gross Agriculture expenditure Y-o-Y.
- **Use Case Steps:** Farmers applies for income support.
  - **Key Activities:** Farmer applies for Income Support under PMKISAN through digital platform by providing various details.
  - **Architecture Building Blocks:** Workflow.
- **Use Case Steps:** Verification of Eligibility and approval.
  - **Key Activities:** District/ Block officer verifies the eligibility under the scheme and approves. The approved requests are pushed to central portal for transfer of benefit to beneficiary account. The details are notified to the applicant farmers through SMS and app notifications.
  - **Architecture Building Blocks:** Workflow, Messaging.

### 8.2.12 Providing Scholarship and Stipend to Students and Unemployed Youth

- **Strategic Indicators:**
  - Growth (percentage) in gross Agriculture expenditure Y-o-Y.
- **Use Case Steps:** Applicant applies for scholarship/ stipend.
  - **Key Activities:** Applicant applies for scholarship/ stipend as per the eligibility criteria defined in the scheme through digital platform by providing various details.
  - **Architecture Building Blocks:** Workflow.
- **Use Case Steps:** Checking of Eligibility and Funds.
  - **Key Activities:** System/ JDA (R&T) / District officer checks eligibility and funds of that particular scheme for Stipend and Book Grant for Students while Principal BATC/DTO checks eligibility and fund for stipend for Educated Rural Unemployed Youths. DA (R &T) then provides approval for both cases. The details are notified to the applicant through SMS and app notifications.
  - **Architecture Building Blocks:** Workflow, Messaging.
- **Use Case Steps:** Funds transferred to beneficiary account.
  - **Key Activities:** As per eligibility, funds will be transferred to bank account of applicant through TreasuryNet system and applicant would be notified through SMS and app notification.
  - **Architecture Building Blocks:** Messaging, Workflow, Financial Management.

### 8.2.13 1917 iTEAMS Agro Advisory, Market Connect and Transport Logistics

- **Strategic Indicators:**
  - Farmers with surplus production to sell in the open market.
  - Gross Global Food Loss Index (GFLI) in metric tons.
- **Use Case Steps:** Farmers calls iTEAMS on 1917.

- Key Activities: Farmer calls 1917 iTEAMS for the service required.
- Architecture Building Blocks: IVR.
- **Use Case Steps**: Registration and information dissemination.
  - Key Activities: Call center executive will enter the details of farmer in system if not registered and provide him the required details. The details are notified to the farmer through SMS and app notifications.
  - Architecture Building Blocks: Workflow, Messaging.

#### 8.2.14 Technical and Financial Assistance for Establishment of Fisheries Infrastructure

- **Strategic Indicators**:
  - Ratio of Maximum Sustainable Yield (MSY) in fishing to current yield.
  - Percentage increase in fish seed production.
- **Use Case Steps**: Citizen/ Farmer applies for financial assistance for establishment of fisheries infrastructure.
  - Key Activities: Citizen/ Farmer applies for financial assistance through digital platform by providing various details for establishment of fisheries infrastructure as per the eligibility criteria of the scheme.
  - Architecture Building Blocks: Workflow.
- **Use Case Steps**: Checking of Eligibility and Funds.
  - Key Activities: District officer checks eligibility and funds of that particular scheme and provide approval. The details are notified to the applicant farmers through SMS and app notifications.
  - Architecture Building Blocks: Workflow, Messaging.
- **Use Case Steps**: Funds transferred to beneficiary account.
  - Key Activities: As per eligibility, funds will be transferred to bank account of applicant as per the eligibility through TreasuryNet system.
  - Architecture Building Blocks: Messaging, Workflow, Financial Management.

#### 8.2.15 Distribution, Care and management of piglets

- **Strategic Indicators**:
  - Per capita meat production.
- **Use Case Steps**: Farmers applies for Piglets.
  - Key Activities: Farmers apply for the Piglets through digital platform by providing various details.
  - Architecture Building Blocks: Workflow.
- **Use Case Steps**: Checking of Eligibility and Stock.
  - Key Activities: System/ District/ Block officer checks eligibility and stock of Piglets and provide approval. The details are notified to the applicant farmers through SMS and app notifications.
  - Architecture Building Blocks: Workflow, Messaging.
- **Use Case Steps**: Distribution of Piglets.
  - Key Activities: Piglets are provided as per pre-defined schedule intimated to farmer through notification/ SMS.
  - Architecture Building Blocks: Messaging, Workflow.

### 8.2.16 Artificial insemination for Cattle Breeding

- **Strategic Indicators:**
  - Per-capita milk yield per milk animal.
  - Per capita meat production.
- **Use Case Steps:** Farmers goes to website for appointment.
  - Key Activities: Farmer will visit website or mobile and schedule appointment for insemination.
  - Architecture Building Blocks: Workflow, messaging.
- **Use Case Steps:** Getting insemination.
  - Key Activities: Farmer visits Veterinary Hospital as per schedule and get the cattle insemination done.
  - Architecture Building Blocks: Messaging.

### 8.2.17 Crossbreeding under Intensive Cattle Development Projects

- **Strategic Indicators:**
  - Per-capita milk yield per milk animal.
  - Per capita meat production.
- **Use Case Steps:** Farmers goes to website for appointment.
  - Key Activities: Farmer will visit website or mobile and schedule appointment for crossbreeding.
  - Architecture Building Blocks: Workflow, messaging.
- **Use Case Steps:** Getting insemination.
  - Key Activities: Farmer visits Veterinary Hospital as per schedule and get the cattle crossbreeding done.
  - Architecture Building Blocks: Messaging.

### 8.2.18 Providing Demonstration & training to internal staff

- **Strategic Indicators:**
  - Percentage increase in total production of fodder in the state.
- **Use Case Steps:** Batches made for Training.
  - Key Activities: Block wise district wise batches made for training as per training needs of officials.
  - Architecture Building Blocks: Workflow.
- **Use Case Steps:** Make batches and publish schedule of training.
  - Key Activities: Training batches are finalized, and schedule is published. The details are notified to the applicant farmers through SMS and app notifications.
  - Architecture Building Blocks: Workflow, Messaging.
- **Use Case Steps:** Arrange trainer and provide training.
  - Key Activities: Trainer is arranged, and training is delivered to the officials.
  - Architecture Building Blocks: Learning Management System, Messaging, Workflow.

### 8.2.19 Poultry Development Programme

- **Strategic Indicators:**
  - Per capita meat production.

- Per capita egg production.
- **Use Case Steps:** Farmers applies for chicks under Poultry Development Programme.
  - **Key Activities:** Poultry Farmers apply for chicks through digital platform by providing various details under Poultry Development Programme.
  - **Architecture Building Blocks:** Workflow.
- **Use Case Steps:** Checking of Eligibility and Stock.
  - **Key Activities:** System/ District/ Block officer checks eligibility and stock of chicks under Poultry Development Programme and provide approval. The details are notified to the applicant farmers through SMS and app notifications.
  - **Architecture Building Blocks:** Workflow, Messaging.
- **Use Case Steps:** Distribution of chicks.
  - **Key Activities:** Chicks are provided as per pre-defined schedule intimated to farmer through notification/ SMS.
  - **Architecture Building Blocks:** Messaging, Workflow.

## 8.2.20 Integrated Pig/ Poultry – Fish Vegetable Farming

- **Strategic Indicators:**
  - Per capita meat production.
  - Per capita egg production.
  - Farmers with surplus production to sell in the open market
  - Percentage growth in average income of small-scale food producers, by sex and indigenous status
  - Ratio of Maximum Sustainable Yield (MSY) in fishing to current yield
- **Use Case Steps:** Farmers applies for piglets, chicks, fish seeds and vegetable seeds.
  - **Key Activities:** Farmers apply for piglets, chicks, fish seeds and vegetable seeds through digital platform by providing various details.
  - **Architecture Building Blocks:** Workflow.
- **Use Case Steps:** Checking of Eligibility and Stock.
  - **Key Activities:** System/ District/ Block officer checks eligibility and stock of piglets, chicks, fish seeds, vegetable seeds and provide approval. The details of distribution schedule are notified to the applicant farmers through SMS and app notifications.
  - **Architecture Building Blocks:** Workflow, Messaging.
- **Use Case Steps:** Distribution of inputs.
  - **Key Activities:** Piglets, chicks, fish seeds and vegetable seeds are provided as per pre-defined schedule intimated to farmer through notification/ SMS.
  - **Architecture Building Blocks:** Messaging, Workflow.

## 8.2.21 Animal Quarantine & Certification Service

- **Strategic Indicators:**
  - Per capita meat production.
  - Per capita egg production.
- **Use Case Steps:** Farmers applies for Certification.
  - **Key Activities:** Animal Farmers apply for Health check and Certification for the farm through digital platform by providing various details.
  - **Architecture Building Blocks:** Workflow.

- **Use Case Steps:** Schedule of Appointment.
  - **Key Activities:** System/ District/ Block officer checks eligibility and appoints appropriate authority for health check and certification. The schedule details are notified to the applicant farmers through SMS and app notifications.
  - **Architecture Building Blocks:** Workflow, Messaging.
- **Use Case Steps:** Checking and Certification.
  - **Key Activities:** Checking is done as per pre-defined schedule intimated to farmer through notification/ SMS and details updated in system for issuance of certification.
  - **Architecture Building Blocks:** Messaging, Workflow, DigiLocker.

## 8.2.22 Seed Production and Quality Certification

- **Strategic Indicators:**
  - Farmers with surplus production to sell in the open market.
  - Percentage growth in average income of small-scale food producers, by sex and indigenous status.
- **Use Case Steps:** Farmers applies for Certification.
  - **Key Activities:** Farmers apply for Seed Quality check and Certification through digital platform by providing various details.
  - **Architecture Building Blocks:** Workflow.
- **Use Case Steps:** Schedule of Appointment.
  - **Key Activities:** District/ Block officer appoints appropriate authority for collection of seed samples. The schedule details are notified to the applicant farmers through SMS and app notifications.
  - **Architecture Building Blocks:** Workflow, Messaging.
- **Use Case Steps:** Collection of sample and testing.
  - **Key Activities:** Appointed officer collects sample and send to testing lab.
  - **Architecture Building Blocks:** Workflow.
- **Use Case Steps:** Checking and Certification.
  - **Key Activities:** Lab testes the sample and upload details in system against application of farmer. If the results meet certification criteria, intimated to farmer through notification/ SMS and details updated in system for issuance of certification.
  - **Architecture Building Blocks:** Messaging, Workflow, DigiLocker.

## 8.2.23 Soil and water analysis for Fresh Water Aquaculture

- **Strategic Indicators:**
  - Per capita meat production.
  - Ratio of Maximum Sustainable Yield (MSY) in fishing to current yield.
- **Use Case Steps:** Farmers applies for analysis.
  - **Key Activities:** Farmers apply for testing of water and soil samples through digital platform by providing various details.
  - **Architecture Building Blocks:** Workflow.
- **Use Case Steps:** Schedule of Appointment.
  - **Key Activities:** District/ Block officer appoints appropriate authority for collection of samples. The schedule details are notified to the applicant farmers through SMS and app notifications.

- Architecture Building Blocks: Workflow.
- **Use Case Steps**: Collection of sample and testing.
  - Key Activities: Appointed officer collects sample and send to testing lab.
  - Architecture Building Blocks: Workflow.
- **Use Case Steps**: Checking and Report sharing.
  - Key Activities: Lab testes the sample and upload details in system against application of farmer. Intimated to farmer through notification/ SMS/ email with details of sample testing and recommendations (if any).
  - Architecture Building Blocks: Messaging, Workflow.

## 8.2.24 Microbiological analysis of water sample

- **Strategic Indicators**:
  - Per capita meat production.
  - Ratio of Maximum Sustainable Yield (MSY) in fishing to current yield.
- **Use Case Steps**: Farmers applies for analysis.
  - Key Activities: Farmers apply for testing of water for parasites through digital platform by providing various details.
  - Architecture Building Blocks: Workflow.
- **Use Case Steps**: Schedule of Appointment.
  - Key Activities: District/ Block officer appoints appropriate authority for collection of samples. The schedule details are notified to the applicant farmers through SMS and app notifications.
  - Architecture Building Blocks: Workflow, Messaging.
- **Use Case Steps**: Collection of sample and testing.
  - Key Activities: Appointed officer collects sample and send to testing lab.
  - Architecture Building Blocks: Workflow.
- **Use Case Steps**: Checking and Report sharing.
  - Key Activities: Lab testes the sample and upload details in system against application of farmer. Intimated to farmer through notification/ SMS/ email with details of sample testing and recommendations (if any).
  - Architecture Building Blocks: Messaging, Workflow.

## 8.2.25 Clinical diagnosis of fish disease

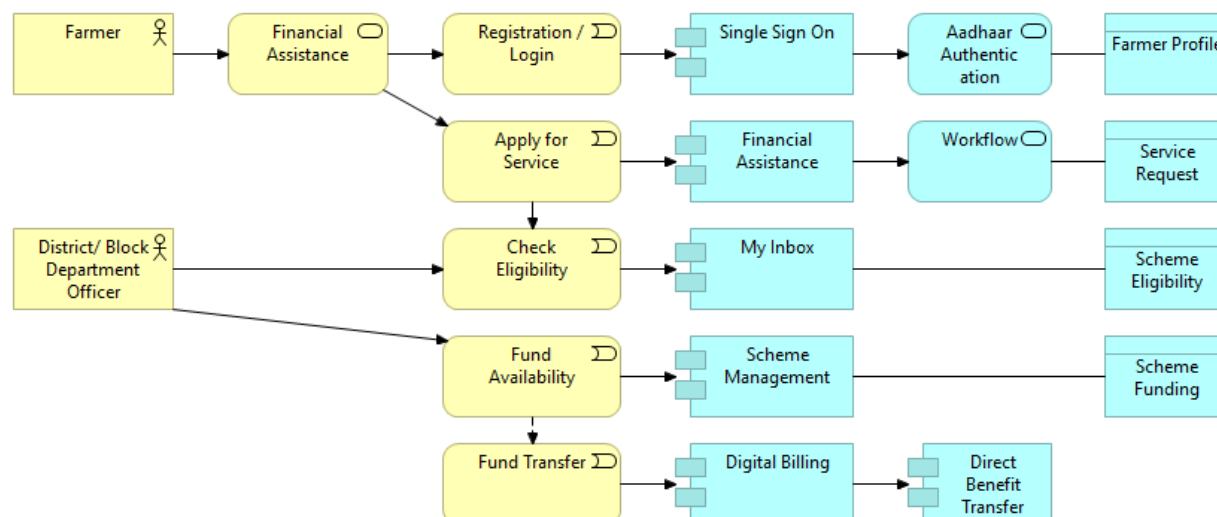
- **Strategic Indicators**:
  - Per capita meat production.
  - Ratio of Maximum Sustainable Yield (MSY) in fishing to current yield.
- **Use Case Steps**: Farmers applies for analysis.
  - Key Activities: Farmers apply for clinical diagnosis of fish disease.
  - Architecture Building Blocks: Workflow.
- **Use Case Steps**: Schedule of Appointment.
  - Key Activities: District/ Block officer appoints appropriate authority for collection of diseased fish. The schedule details are notified to the applicant farmers through SMS and app notifications.
  - Architecture Building Blocks: Workflow, Messaging.
- **Use Case Steps**: Collection of sample and testing.

- Key Activities: Appointed officer collects sample and send to diagnosis clinic.
- Architecture Building Blocks: Workflow, Messaging.
- **Use Case Steps**: Checking and Report sharing.
  - Key Activities: Center testes the sample for disease and upload details in system against application of farmer. Intimated to farmer through notification/ SMS/ email with detailed report and recommendations (if any).
  - Architecture Building Blocks: Messaging, Workflow.

## 8.3 Illustration of Use Case Realization

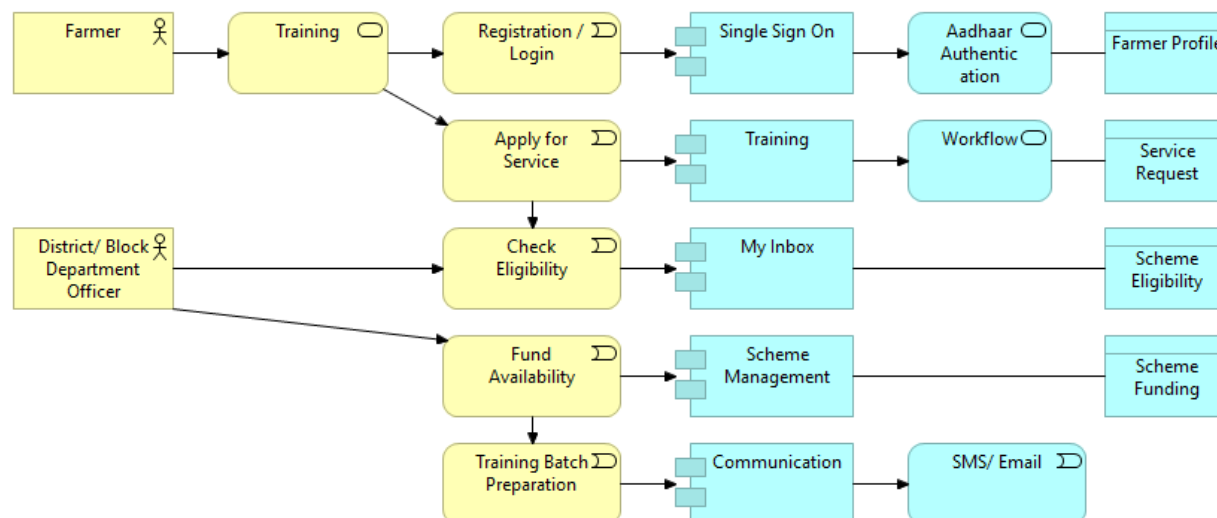
### 8.3.1 Financial Assistance

As defined in previous section, the farmer applies for financial assistance and the request is routed to Department Official for verification of eligibility and necessary checks in the application. The officer will be able to manage schemes and funds for particular schemes. On approval, the request will go to bank for transfer of funds to the applicants' bank account. The illustrative use case is as shown below:



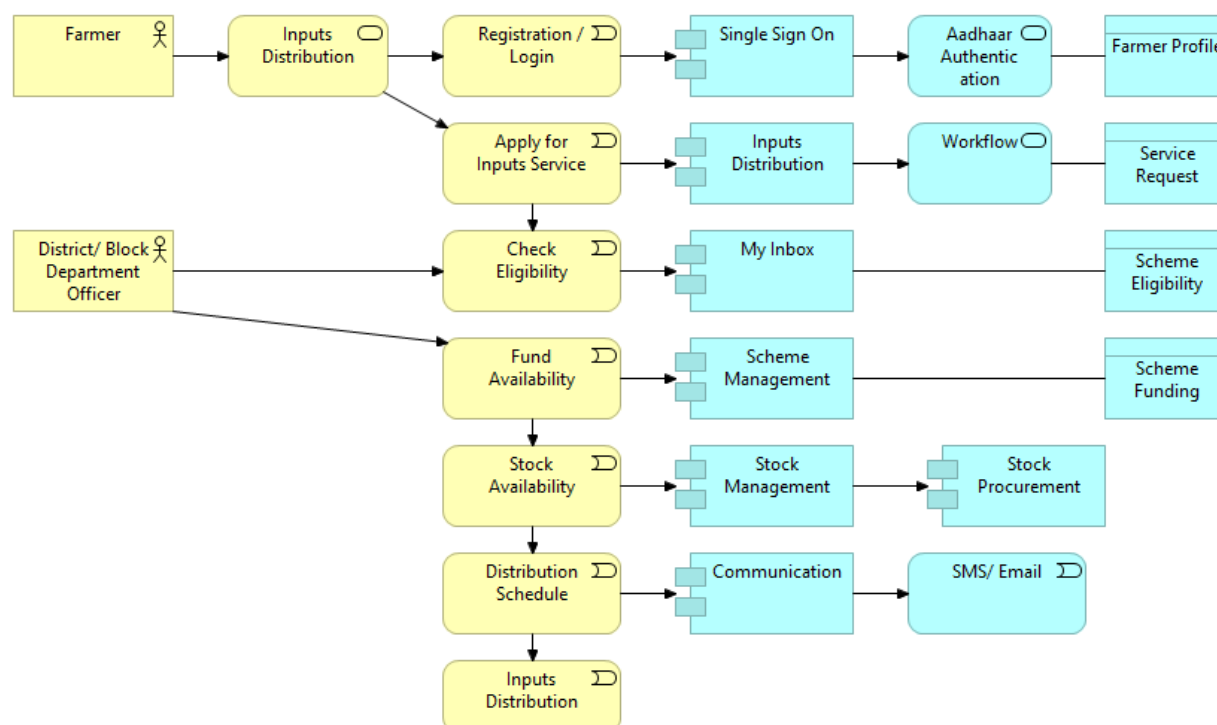
### 8.3.2 Training

The farmer will apply for training service and the request will be routed to Department Official for verification of eligibility and necessary checks in the application. The officer will be able to manage schemes and funds for particular training. The officer will approve application and notification in form of SMS/ email/ app push notification will be sent to applicant farmer. Based on the number of applicants, the officer will schedule training batch and notification with scheduled date, time and place will be sent to applicant. The applicant has to attend the training as per the schedule given by the officer. The illustrative use case is as shown below:



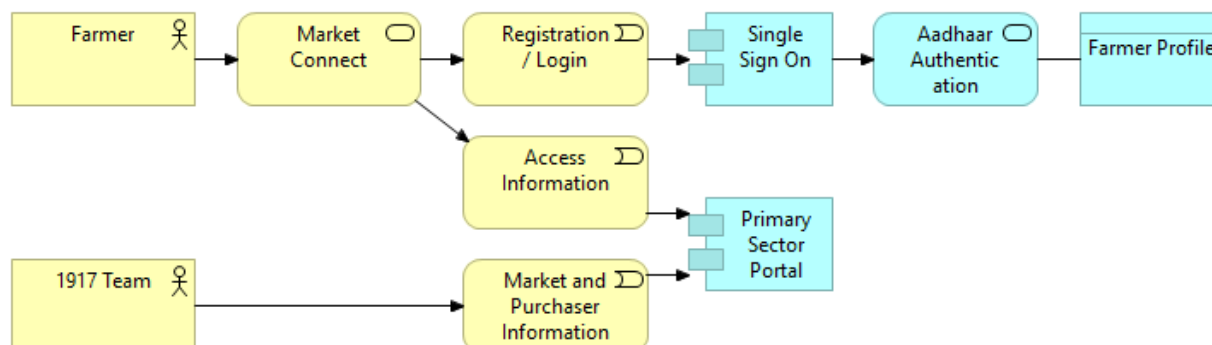
### 8.3.3 Inputs Distribution

The farmer will apply for inputs and the request will be routed to Department Official for verification of eligibility and necessary checks in the application. The officer will be able to manage schemes and funds. The stock received from the vendor will be added/ modified by the concerned officer in the system. The officer will approve application and notification in form of SMS/ email/ app push notification will be sent to applicant farmer along with scheduled date and time. The applicant has to collect the inputs/ seeds would be distributed at door step as per the schedule. The illustrative use case is as shown below:



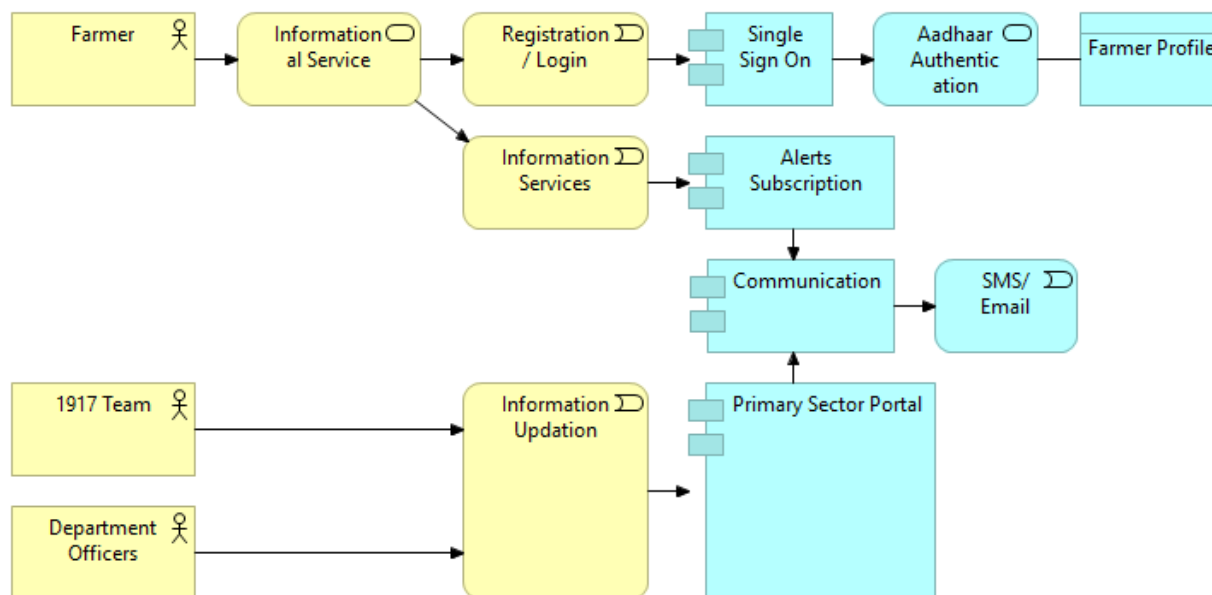
### 8.3.4 Market Connect

The farmer will login to the Primary Sector portal and clicks on Market Connect. System will fetch required available information for perspective buyers, Market Price Information, Quality Seeds/ Inputs etc. 1917 team will connect to farmers/ buyers and keep on feeding/ updating the information in the 1917 iTEAMS system. The required details will be pushed to farmer through Primary Sector/ State portal. In case the information is not available, the team will collect the required information and update against the service request. A notification will be sent to the requester once the information is entered. The illustrative use case is as shown below:



### 8.3.5 Informational Services

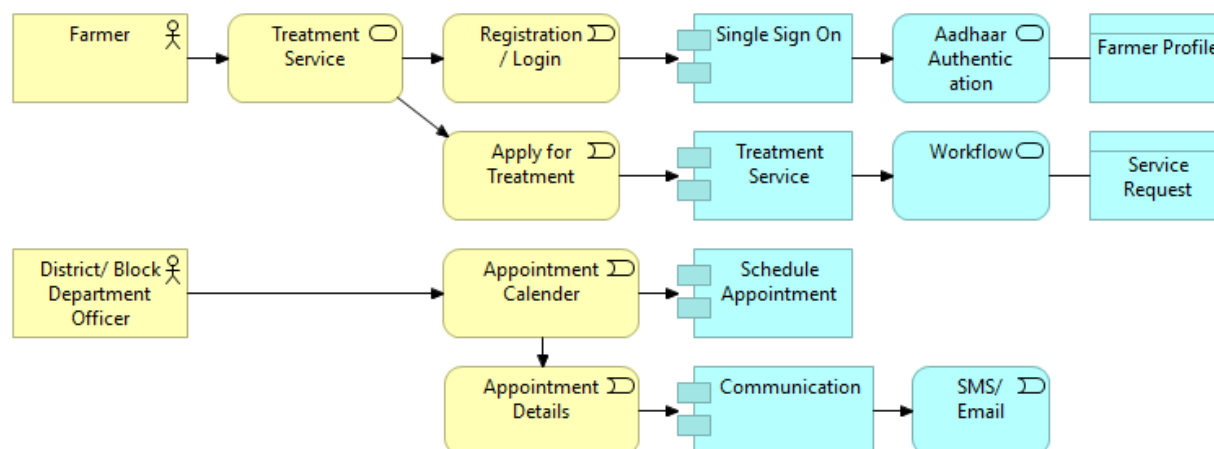
The farmer will login to the Primary Sector portal and register for alerts. The required details will be pushed to farmer through notifications. Designated officers/ teams will keep on updating information in system and notification will be sent to all registered users. The illustrative use case is as shown below:



### 8.3.6 Treatment Services

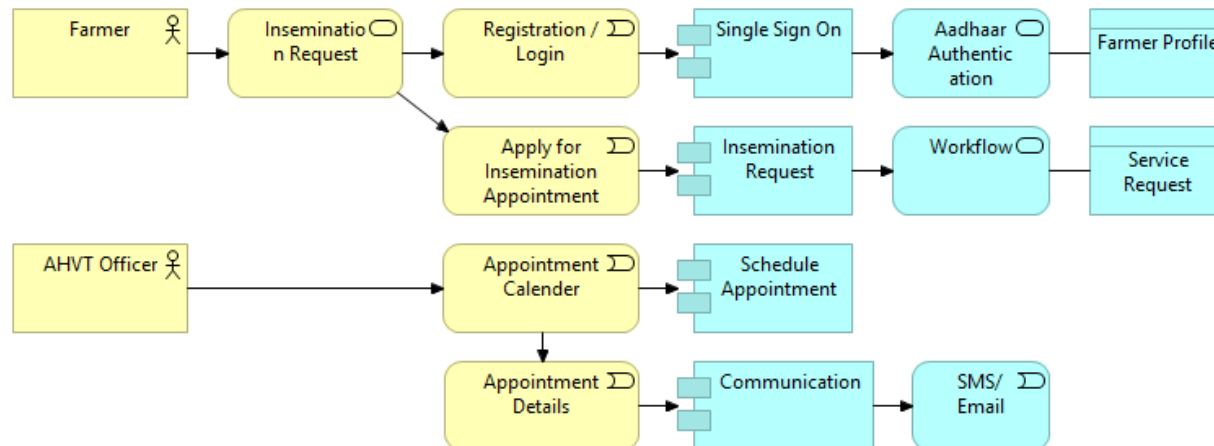
The farmer will seek appointment for treatment through Primary Sector portal. The request will be

assigned to respective officer for scheduling appointment. Once appointment is fixed, a notification will be sent to the applicant. The applicant has to visit Veterinary Hospital as per the scheduled appointment. The illustrative use case is as shown below:



### 8.3.7 Request for Insemination

The farmer will seek appointment for insemination through Primary Sector portal. The request will be assigned to respective officer for scheduling appointment. Once appointment is fixed, a notification will be sent to the applicant. The applicant has to visit Veterinary Hospital as per the scheduled appointment. The illustrative use case is as shown below:



## 8.4 Architecture Realization

Based on above analysis on services, a set of building blocks are required to be built to deliver the services in the desired manner. These building blocks can be built through key changes in each of the architecture layers.

### 8.4.1 Performance Architecture

Primary Sector have been assigned certain strategic goals that are required to be achieved. These goals are planned to be measured through certain indicators. The indicators are further mapped to the services through which they can be achieved. The services have been enabled through architecture initiatives and solutions to enhance delivery experience for the farmers and citizens.

The Strategic Indicators are listed below:

S. No	Strategic Indicators
1	Farmers with surplus production to sell in the open market
2	Distribution of soil health cards to 100% farmers by 2019
3	Rice, wheat and coarse cereals produced annually per unit area (Kg / Ha)
4	Percentage growth in average income of small-scale food producers, by sex and indigenous status
5	Increase net cropping intensity (Cropping intensity refers to raising of a number of crops from the same field during one agricultural year; it can be expressed through a formula. $\text{Cropping Intensity} = \text{Gross Cropped Area} / \text{Net Sown Area} \times 100$ )
6	Percentage of indigenous species under conservation
7	Increase in Agriculture orientation index
8	Growth (percentage) in gross Agriculture expenditure Y-o-Y
9	Percentage of growth of export subsidy to agriculture exports
10	Gross Global Food Loss Index (GFLI) in metric tones
11	Ratio of chemical fertilizers sold to ratio of crop production
12	Percentage increase in total production of fodder in the state
13	Per-capita milk yield per milk animal.
14	Per capita meat production.
15	Per capita egg production.
16	Ratio of Maximum Sustainable Yield (MSY) in fishing to current yield
17	Percentage increase in fish seed production
18	Proportion of local breeds classified as being at risk, not-at-risk or at unknown level of risk of extinction
19	Annual growth rate in agriculture sector
20	Farmers with surplus crop production, enabled to be an entrepreneur

Table 32: Strategic Indicators of Primary Sector

Please follow [Section 2.5](#) for details.

The indicator to service mapping can be seen at [Annexure 9.4](#). The mapping has been done considering the contribution of service to achieve target of that particular indicator.

The service will be delivered through different applications and application modules the mapping

can be seen at [Annexure 9.11](#).

The budget outlay for the applications and modules would be prepared as part of implementation. The funds will be sanctioned for each identified project/ application and RFP will be floated for deciding the implementation agency.

## 8.4.2 Business Architecture

The approach towards business architecture is service identification, rationalization of service, current state assessment including mapping to indicators and prioritization of services and business transformation requirements.

- Service Identification – **142** services have been entered as service in the MeghEA portal.
- Service Rationalization – **50** Services have been identified post rationalization.
- Service Prioritization – **23** Services have been prioritized based on detailed assessment.
- New Services – **7** New services have been identified for inclusion in future state service portfolio.

**Future Service Portfolio:** Primary Sector would have future services enhanced and efficiently delivered. The future service portfolio would comprise of three sets of services:

- The prioritized set of 23 services;
- The non-prioritized set of 27 services;
- The newly introduced set of 7 services.

The key changes that are part of the recommendations in business architecture are listed as Business Transformation changes which includes Game Changes and identification of BPR opportunities.

The business architecture of the future state portfolio of Primary Sector would include key business services grouped according to functional categorizations to suit user needs.

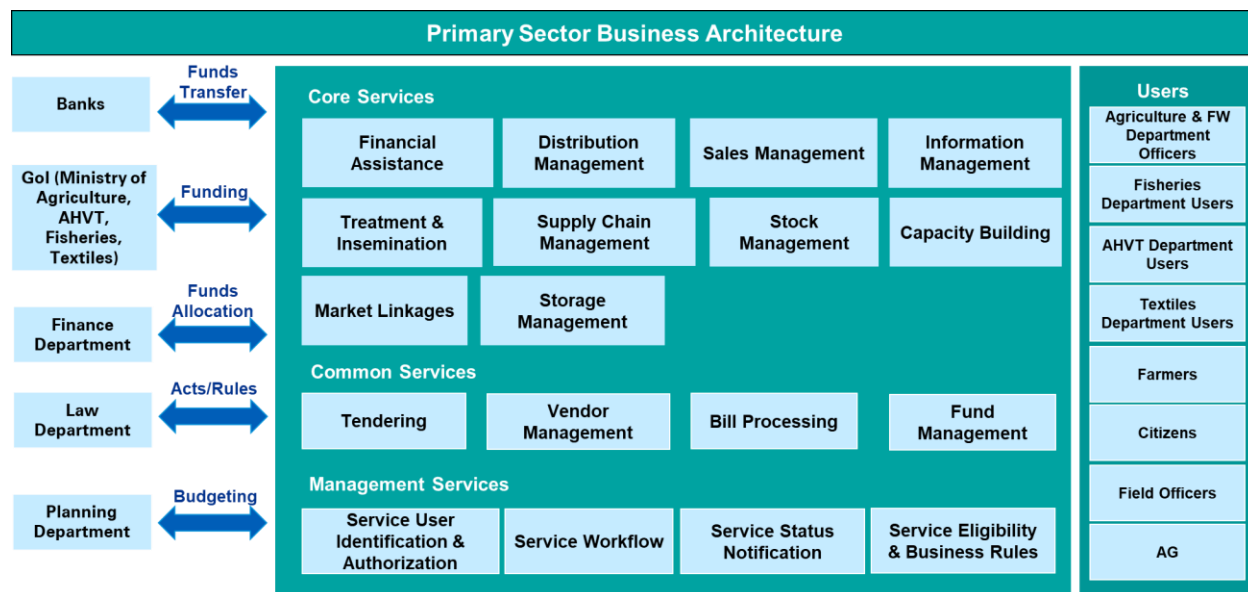


Figure 29: Future State Business Architecture

The services in the future state would be delivered through Primary Sector application whereas there will be four departments i.e. Agriculture and Farmers Welfare, Animal Husbandry & Veterinary,

Fisheries and Textiles, **collaborating** to deliver the services. The primary and secondary responsibility has been fixed for each service in the [future state portfolio](#). The responsibility matrix to protect the departmental autonomy is as below:

Service Code	Service Name	Primary Responsibility	Secondary Responsibility
AFW.01	Provide Training and Awareness to Agriculture Farmers	Agriculture & Farmers Welfare Department	C&RD Department
AFW.02	Financial Assistance for Establishment of Agriculture Infrastructure	Agriculture & Farmers Welfare Department	Finance Department
AFW.05	Providing infrastructure for seed production by farmers' producer groups.	Agriculture & Farmers Welfare Department	Finance Department, Line Departments
AFW.06	Distribution of Seeds to Farmers	Agriculture & Farmers Welfare Department	Finance Department
AFW.07	Financial Assistance for Purchase of Machinery	Agriculture & Farmers Welfare Department	Finance Department
AFW.11	Sale of Planting Materials	Agriculture & Farmers Welfare Department	
AFW.13	Distribution of Organic Manure	Agriculture & Farmers Welfare Department	Finance Department
AFW.15	Daily Market Price Information on Agriculture/Horticulture Commodities	Agriculture & Farmers Welfare Department	
AFW.16	Distribution of Soil Health Card to Farmers	Agriculture & Farmers Welfare Department	
AFW.17	Creation of water harvesting structure under PMKSY-PDMC	Agriculture & Farmers Welfare Department	Finance Department, Line Departments
AFW.20	Testing of seed samples collected from the farmers	Agriculture & Farmers Welfare Department	
AFW.21	Providing Inputs to Farmers	Agriculture & Farmers Welfare Department	
AFW.22	Training to Officials	Agriculture & Farmers Welfare Department	
AFW.23	Transfer of Funds to Allied Departments under RKVY	Agriculture & Farmers Welfare Department	Finance Department, Line Departments
AFW.24	Crop Insurance to Farmers	Agriculture & Farmers Welfare Department	
AFW.29	Financial Assistance for Production Activities	Agriculture & Farmers Welfare Department	Finance Department, Line Departments
AFW.35	Release of promising varieties/lines of different crops under Agri Research Station and Labs Scheme.	Agriculture & Farmers Welfare Department	
AFW.37	Distribution of Machineries and Equipments	Agriculture & Farmers Welfare Department	Finance Department

Service Code	Service Name	Primary Responsibility	Secondary Responsibility
AFW.41	Sale of Processed Products through Meg Sale Outlet	Agriculture & Farmers Welfare Department	
AFW.43	Information Services under Agri/Hort Information Scheme	Agriculture & Farmers Welfare Department	
AFW.46	Income support to farmers through Pradhan Mantri Kisan Samman Nidhi (PMKISAN)	Agriculture & Farmers Welfare Department	Finance Department
AFW.51	Transfer of funds under National Bamboo Mission	Agriculture & Farmers Welfare Department	Finance Department
AFW.57	Providing Scholarship and Stipend to Students and Unemployed	Agriculture & Farmers Welfare Department	Finance Department
AFW.63	Providing Financial Assistance for Integrated farming to the farmer	Agriculture & Farmers Welfare Department	Finance Department
AFW.74	Community canning	Agriculture & Farmers Welfare Department	
AFW.83	Assistance for Setting up of pineapple stockyard and mini processing unit under the project scheme article 275(1) of the constitution of India	Agriculture & Farmers Welfare Department	Finance Department, Line Departments
AFW.91	1917 iTEAMS Agro Advisory, Market Connect and Transport Logistics	Agriculture & Farmers Welfare Department	
AFW.96	Exposure trip for award winning/progressive farmers under Farmers Institute scheme	Agriculture & Farmers Welfare Department	Finance Department
AFW.100	Exhibition/ Festivals/ Shows (Mela)	Agriculture & Farmers Welfare Department	
AFW.101	Application for Stall in North East Food Show	Agriculture & Farmers Welfare Department	
AHS.01	Distribution and Management of Livestock	AHVT Department	Finance Department
AHS.02	Treatment of ailing Animals and Birds	AHVT Department	
AHS.03	Artificial insemination for Cattle Breeding	AHVT Department	
AHS.06	Training of AHVT farmers	AHVT Department	
AHS.07	Providing Demonstration & training to internal staff	AHVT Department	
AHS.08	Poultry Development Programme	AHVT Department	

Service Code	Service Name	Primary Responsibility	Secondary Responsibility
AHS.10	Preventive measures through vaccination	AHVT Department	
FIS.01	Technical and Financial Assistance for Establishment of Fisheries Infrastructure	Fisheries Department	Finance Department
FIS.12	Input Distribution	Fisheries Department	Finance Department
FIS.13	Product Selling	Fisheries Department	
FIS.14	Training	Fisheries Department	
FIS.15	Supply Chain	Fisheries Department	
TEX.04	Plantation of Mulberry, Eri and Muga	Textiles Department	Finance Department
TEX.05	Financial Assistance for Establishment of Infrastructure	Textiles Department	Finance Department
TEX.06	Supply of rearing appliances	Textiles Department	Finance Department
TEX.08	Purchase of Cocoons by Silk Reeling Unit	Textiles Department	Finance Department
TEX.10	Sale of Yarn through Mini Yarn Bank	Textiles Department	
TEX.13	Distribution of Chowki worms and Silkworm eggs	Textiles Department	Finance Department
TEX.14	Establishment of Handloom Weaving Training Centre	Textiles Department	
TEX.15	Supply of Yarn to the Weavers	Textiles Department	Finance Department
AFW.102	Integrated Pig/ Poultry – Fish Vegetable Farming	Agriculture & Farmers Welfare Department, AHVT Department	
AHS.12	Animal Quarantine & Certification Service	AHVT Department	
AFW.103	Seed Production and Quality Certification	Agriculture & Farmers Welfare Department	
FIS.15	Soil and water analysis for Fresh Water Aquaculture	Fisheries Department	
FIS.16	Microbiological analysis of water sample	Fisheries Department	
FIS.17	Clinical diagnosis of fish disease	Fisheries Department	

### 8.4.3 Application Architecture

The application architecture is a representation of the business aligned systems, the portfolio of the systems, the technology behind the systems, the information access methodology and the gaps around the systems – both functional and technical.

The application architecture approach consists of current state assessment. The current portfolio consists of Government of Meghalaya systems and external systems that are frequently used:

- Internal State Government Systems:
  - Meghalaya Agri Board Portal
  - Farm Mechanization Portal
- External Systems
  - Service Plus
  - 1917 iTEAMS System (Developed by DIC)
  - Soil Health Card
  - AgMarknet
  - PM Kisan

As a part of the analysis, a thorough analysis on existing business functions, IT maturity in each function, key gaps in the applications existing, data and technology standardization level, reliability and scalability aspects etc. has been conducted and a suitable EA model for Meghalaya has been developed, which could be a sustainable model to cater the requirements. Please refer section for details.

The application transformation plan for Primary Sector architecture has been categorized under following heads:

1. Business Functionality Enhancement
2. Application Architecture Enhancement
3. Infrastructure Upgrade
4. Decommissioned

The future state application architecture to support the business transformation plan would can be represented through the following figure:

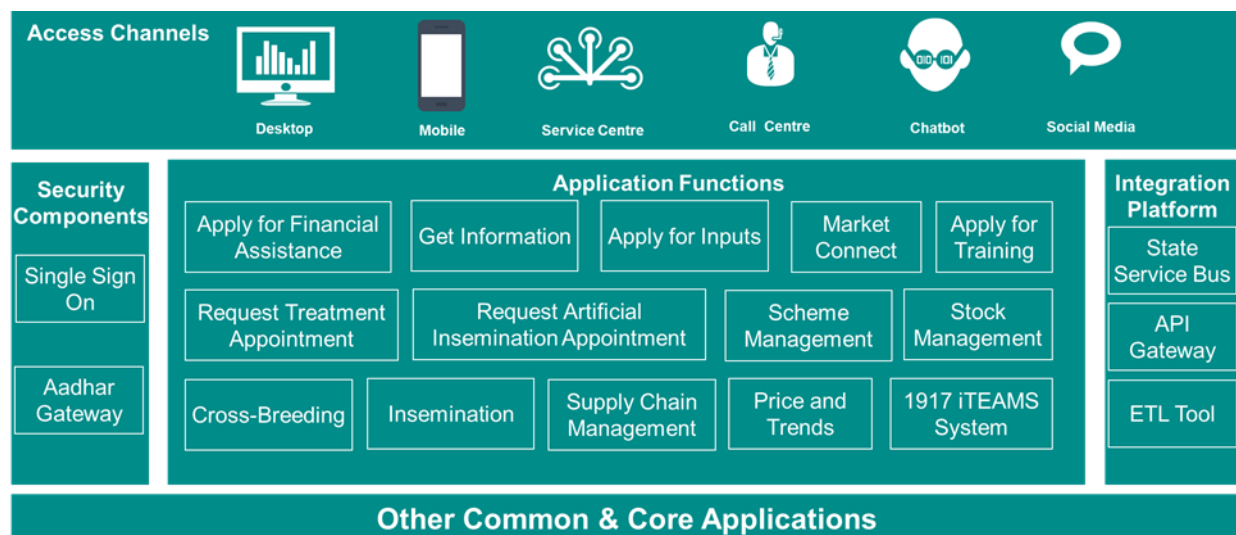


Figure 30: Future State Application Architecture

## 8.4.4 Data Architecture

Data architecture identifies the key aspects of information management – the key data that resides

in the enterprise, how government can deliver services using the data, which are the stakeholders that accesses the data, how the data is managed through secured storage, access and the various forms in which the data is needed.

The **key** data entities (at conceptual level) are defined in two categories:

- Existing data entities:
  - Commodity Prices
  - Farmer Details
  - Purchaser Details
  - Farmer Crop Details
  - Transport Details
  - Machine Details
  - Vendor Details
  - Allotment Details
  - Farmer Land Details
- New data entities:
  - Sales Order
  - Service Request
  - Medicine Stock Registry
  - Location
  - Animal Farm
  - Treatment Request Register
  - Animal Register
  - Poultry Register
  - Officer Register
  - Stock Register
  - Pond
  - Scheme Register
  - Service Register

The key interventions required in data architecture to align the data to support the business transformation plan is categorized as below:

- **Data Design:** The data design needs to be revamped to align the data architecture adhering to the data principles.
- **Data Governance:** Departments in Primary Sector would have a role to play in each of the stages of the Data Lifecycle for the Scheme (core data entity). Data Trustee and data steward role has been defined for each data life-cycle management phases.

- **Data Tools:** To enable business transformation, the data portfolio requires few tools and technologies to support the plan.

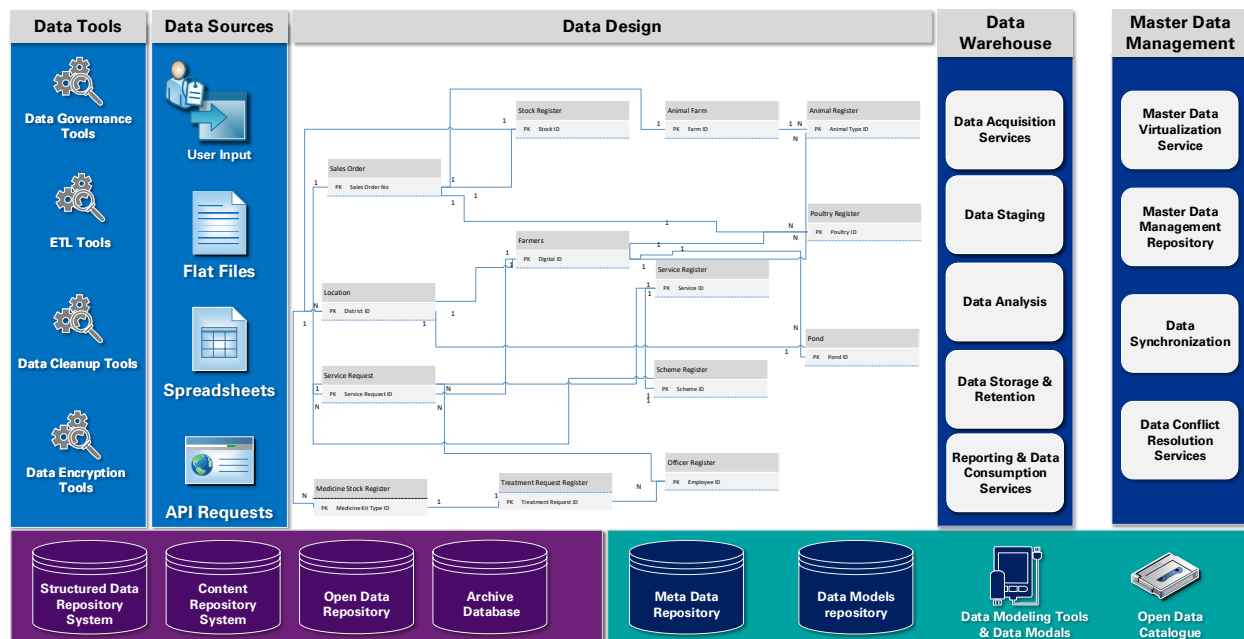


Figure 31: Future State Data Architecture

## 8.4.5 Technology Architecture

The technology architecture defines the infrastructure (IT) and their respective technical standards to enable better system integration and interoperability and align the application and data to deliver the required results to realize the business transformation objective.

Technology architecture section of the document illustrates the current state of the technology architecture for Primary Sector, the gaps identified in the technology architecture and the future (proposed) requirements.

**Current State Assessment:** This includes the key infrastructure, system technology, devices and tools portfolio:

- **Environment & Locations:** The key infrastructure for different environments (development, production and testing) is illustrated in the section.
- **Network:** The section illustrates the primary and secondary network availability in the State of Meghalaya.
- **System-Technology List:** The list of systems along with the supporting technology is illustrated in this section.

Aligned to the transformation plan, a gap analysis was carried out to derive the future state of the technology architecture. The future state transformation plan is categorized under following:

- **State Data Centre Modernization:** Upgrade of infrastructure (systems) in the data center to modernize system technology landscape.
- **Network Availability:** Requirement for uninterrupted primary and secondary network to facilitate the planned business transformation.

The diagram below illustrates the future state deployment model for Primary Sector:

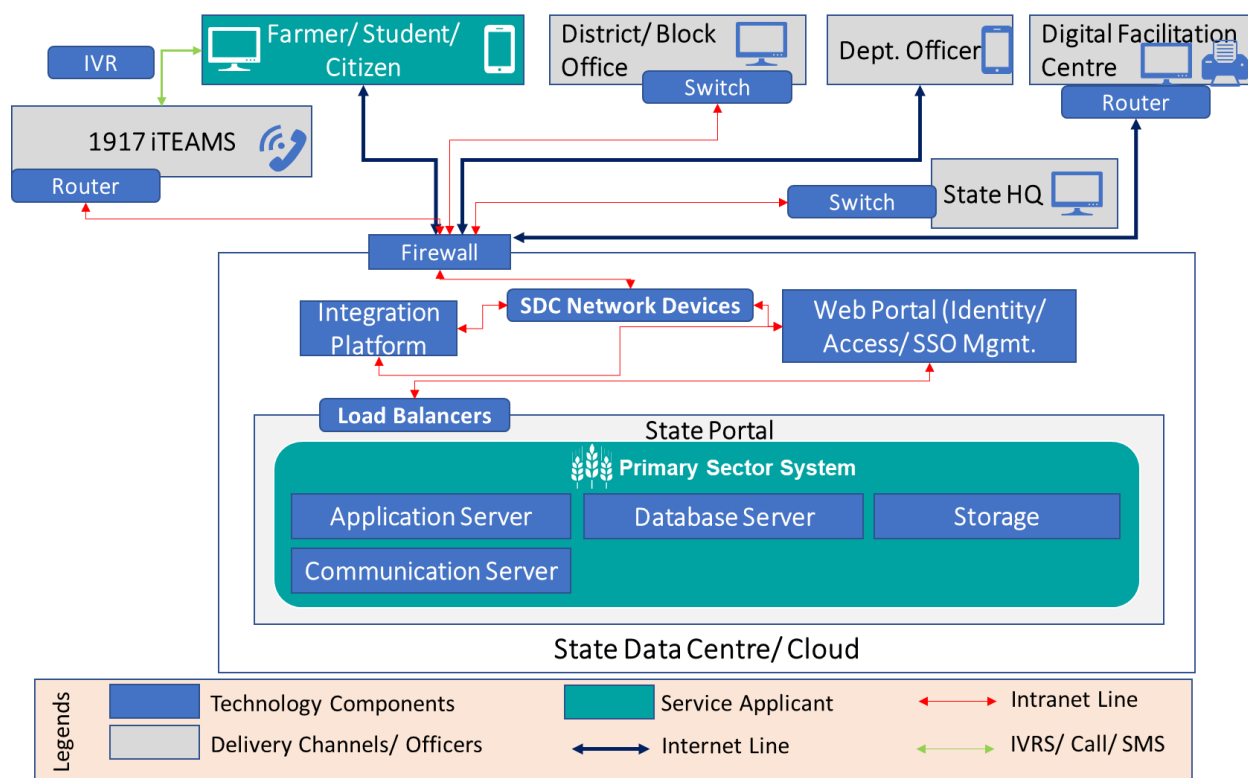


Figure 32: Future State Technology Architecture

## 8.4.6 Security Architecture

Security architecture illustrates the security details of the information storage, access and management. The security architecture has key transformation requirement to facilitate the realization of the business objectives:

- **Single Sign-On:** Harmonized identification and authentication for all systems to enable realization of the business objective of ease of use, secured data transmission and access of information.
- **Data Classification and Management:** The security architecture also illustrates the need for classification of data and rules governing each classified set of data.

The proposed business transformation framework is illustrated below:

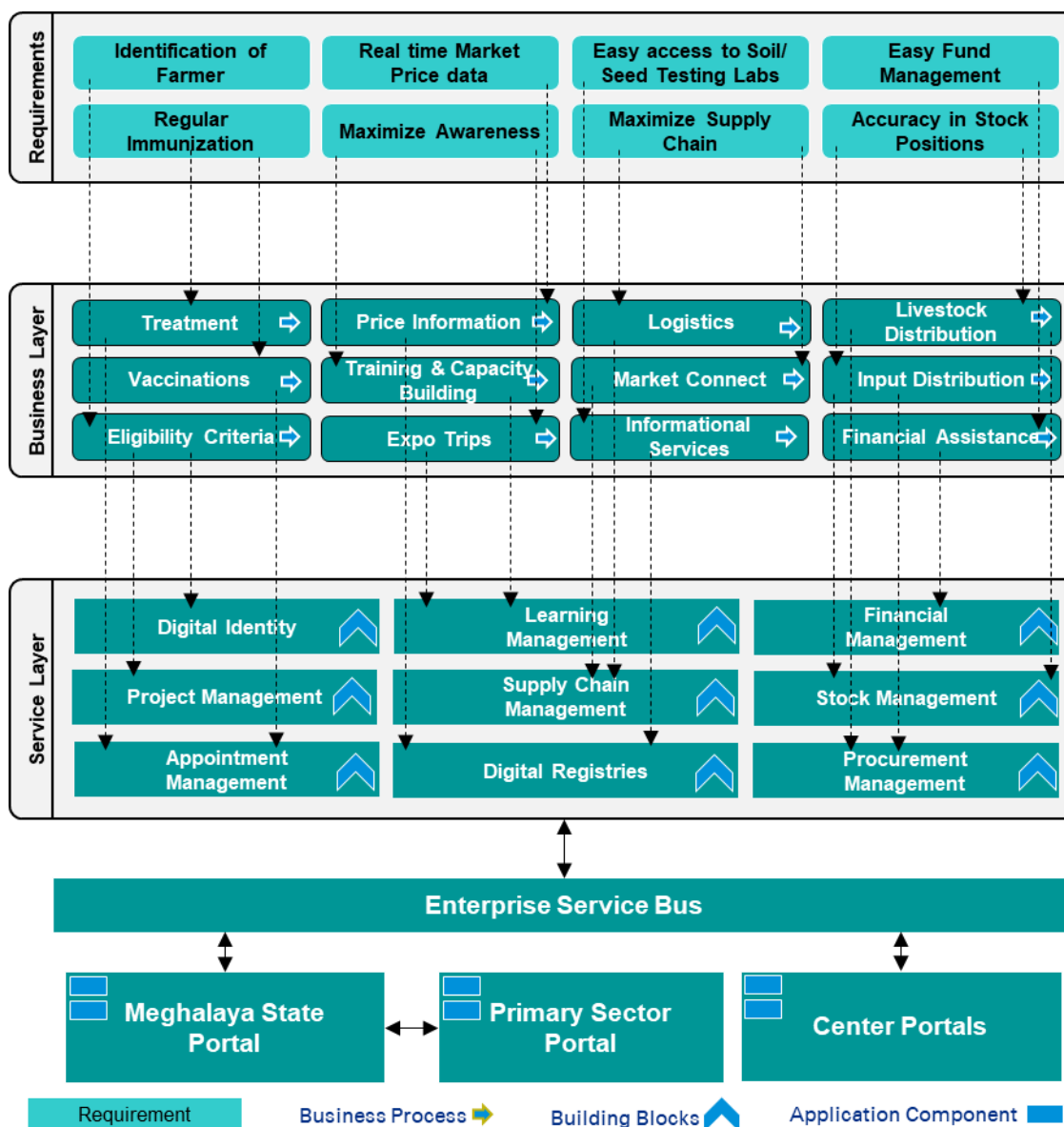


Figure 33: Business Transformation framework

The Architecture realization model comprises of key changes in each of the above layers. Below is the diagrammatic representation for the same.

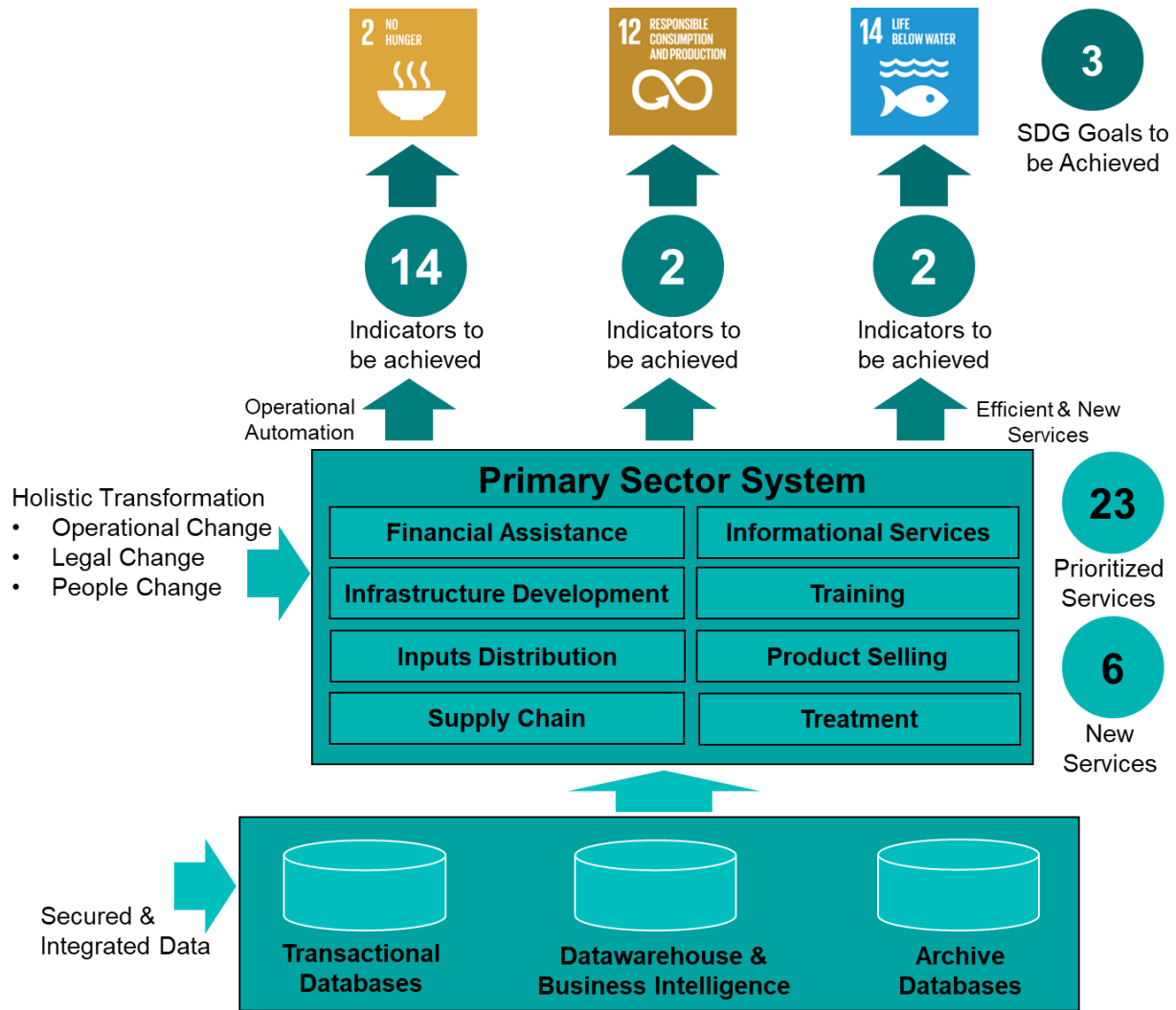
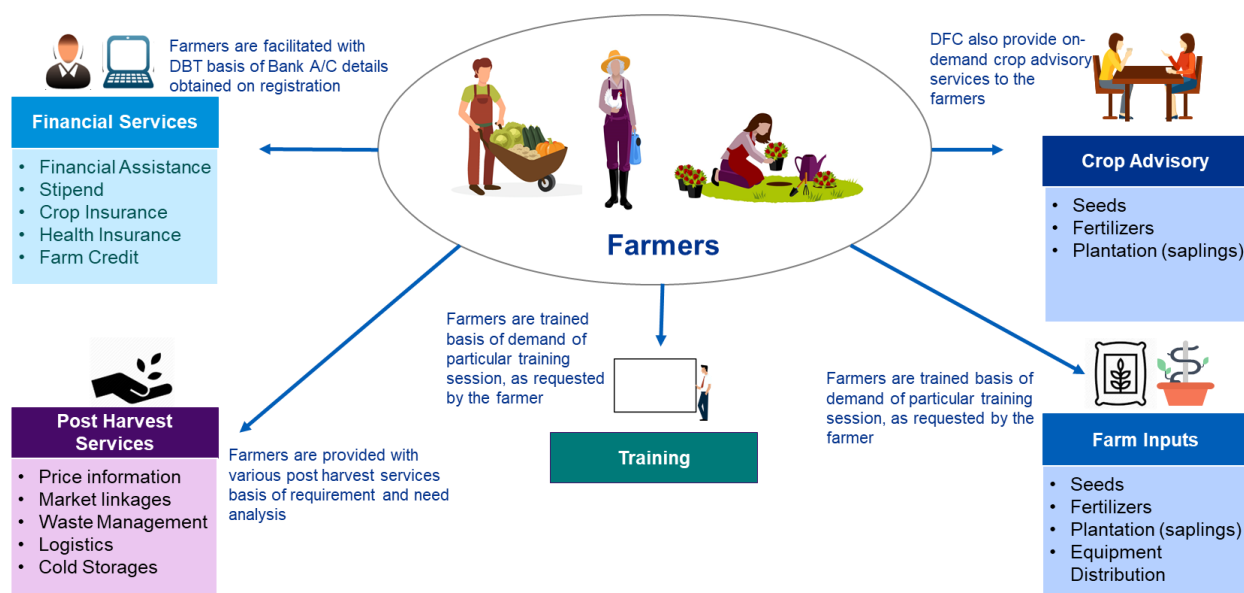


Figure 34: Primary Sector Architecture Realization Model

## 8.5 Architecture Initiatives

### 8.5.1 Connect

The section focuses on the initiatives to connect citizens, business and communities to the governance ecosystem through convenient channels leveraging modern technologies. Connect would also interlink the service providers with service beneficiaries in an open but secured manner. One of the key service providers will be Digital Facilitation Center for which the intended benefits (but not limited to) will be as below:



Other components for connecting are as mentioned below:

IT System	Description	Dependency/ Risk
Service Plus	<p>Service Plus has already been deployed in Meghalaya. The service plus instance shall include following new services:</p> <ul style="list-style-type: none"> <li>Application for Financial Assistance for Establishment of Infrastructure.</li> <li>Application for Training and Awareness.</li> <li>Application for Seeds.</li> <li>Application for Financial Assistance for Purchase of Machinery.</li> <li>Application for Testing of seed samples.</li> <li>Application for Agriculture Inputs.</li> <li>Application for Scholarship/ Stipend.</li> <li>Application for Livestock.</li> <li>Appointment request for Treatment/ Insemination/ Vaccination.</li> </ul>	<ul style="list-style-type: none"> <li>Service plus needs to have the capability to support reengineered service delivery as well as new transactions.</li> <li>Enablement of cloud infrastructure needs to be explored.</li> </ul>
Chatbot	A Chatbot with business name "Ask Megha" would be implemented, the chatbot would have the artificial	

IT System	Description	Dependency/ Risk
	intelligence capability to facilitate citizens to avail service through simple text request.	
Primary Sector System	Primary Sector System needs to be built with following functional modules: <ul style="list-style-type: none"> <li>• Scheme Management</li> <li>• Supply Chain Management</li> <li>• New Service Application (Service Plus)</li> <li>• Insemination</li> <li>• Crossbreeding Scheduler</li> <li>• Market Prices and Trends</li> <li>• 1917teams System</li> <li>• Fund Management</li> <li>• Stock Management</li> <li>• Vaccination Record Management</li> </ul>	Departments under Primary Sector needs to provide detailed business requirement to enable development team to implement this.

### 8.5.2 Collaborate

Making government units cohesively work towards delivering value ensuring a single government experience to the stakeholders of the government. Collaborate would also orchestrate the activities of the government to enhance efficiency in functioning and citizen centric service delivery. The different APIs required to make this happen are described below:

API	Data Sharing Details	Source Application	Destination Application
Service_Request_ID	<ul style="list-style-type: none"> <li>• Service ID (Number)</li> <li>• Mobile Number (Number)</li> </ul>	Chatbot	Service Plus
Service_Acknowledgement	<ul style="list-style-type: none"> <li>• Service request ID(Number)</li> <li>• Service application URL</li> </ul>	Service Plus	Chatbot
Aadhar_Verification	<ul style="list-style-type: none"> <li>• Aadhar Number</li> <li>• Verification Result</li> </ul>	Service Plus	UIDAI
Fetch_Name_&_Demography-Aadhaar	<ul style="list-style-type: none"> <li>• Virtual Aadhaar ID</li> <li>• Name</li> <li>• Date of Birth</li> <li>• Last Name</li> <li>• First Name</li> <li>• Address</li> <li>• Pin Code</li> <li>• Sex</li> </ul>	Service Plus	UIDAI

API	Data Sharing Details	Source Application	Destination Application
Request_Benefit	<ul style="list-style-type: none"> <li>Farmer's Digital ID</li> <li>Farmer's demographic details</li> <li>Request Item type</li> <li>Requested Item Stock</li> <li>Supporting Document</li> <li>DAO Approval</li> </ul>	Service Plus	Primary Sector System
Manage_Scheme	<ul style="list-style-type: none"> <li>Scheme ID</li> <li>Scheme Type</li> <li>Scheme Items</li> <li>Scheme Fund Approval</li> </ul>	Primary Sector System	TreasuryNet
Request_Piglets	<ul style="list-style-type: none"> <li>Farmer's Digital ID</li> <li>Farmer's demographic details</li> <li>Animal breed type</li> <li>Animal Count Requested</li> <li>Nearest Farm</li> <li>Supporting Document</li> <li>AHVO Approval</li> </ul>	Service Plus	Primary Sector System
Request_Insemination	<ul style="list-style-type: none"> <li>Farmer's Digital ID</li> <li>Farmer's demographic details</li> <li>Animal breed type</li> <li>Insemination Details</li> <li>Nearest Farm</li> <li>Supporting Document</li> <li>AHVO Approval</li> </ul>	Service Plus	Primary Sector System
Request_Cross-breeding	<ul style="list-style-type: none"> <li>Farmer's Digital ID</li> <li>Farmer's demographic details</li> <li>Animal breed type</li> <li>Insemination Details</li> <li>Nearest Farm</li> <li>Supporting Document</li> <li>AHVO Approval</li> </ul>	Service Plus	Primary Sector System
Poultry_Sales	<ul style="list-style-type: none"> <li>Farm ID</li> <li>Sales Revenue</li> <li>Sales Item</li> <li>Item Price</li> <li>Purchaser Information</li> </ul>	Primary Sector System	TreasuryNET

API	Data Sharing Details	Source Application	Destination Application
Service_Status	<ul style="list-style-type: none"> <li>Service Request ID</li> <li>Service Status</li> <li>Reason for Delay</li> </ul>	Primary Sector System	Service Plus

### 8.5.3 Empower

Creating opportunities and accessibility provided to citizens, to develop capabilities that are valuable to actively participate in the development and decision making of a community. It can be viewed in terms of knowledge and other aspects (such as digital inclusion) and affecting their everyday quality of life.

Program	Description
Digitization of Data	<p>Following data needs to be digitized:</p> <ul style="list-style-type: none"> <li>Data of Farms distributing piglets.</li> <li>Data of Stock available related to Livestock, Inputs, Seeds, Machineries etc.</li> <li>Data of poultry farms.</li> <li>Data related to Agriculture Farms along with Crops details.</li> <li>Farmers demographic details.</li> <li>Agriculture and FW, Fisheries, AHVT Officers role and location.</li> <li>GIS tagging of ponds, livestock farms and agriculture farms.</li> <li>Existing beneficiary data.</li> </ul>
Digital Service Training	<p>For the services to be digitized, the need for training and capacity building is at following levels:</p> <ul style="list-style-type: none"> <li>Officers on Service Plus</li> <li>Department Officers on Primary Sector System</li> <li>Farms &amp; Poultry Managers on Primary Sector System</li> <li>Farmers to avail services (Build digital content only)</li> <li>Fishers Officers on Primary Sector System</li> <li>Potential applicants to avail services (Build digital content only)</li> </ul>
Learning Management System	The MeghEA learning Management System would enable to deliver learning lessons online. There is a training requirement of department officers on the usages of the system.

## 9. Annexure

### 9.1 Goals, Indicators and Baseline data for Primary Sector

#### 9.1.1 Indicators Assigned to Primary Sector Pillar

SDG Goal	Indicator	Department
Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture	Per-capita milk yield per milk animal.	Animal Husbandry & Veterinary Department
	Per capita meat production.	Animal Husbandry & Veterinary Department
	Per capita egg production.	Animal Husbandry & Veterinary Department
	Farmers with surplus production to sell in the open market	Agriculture & Farmers Welfare Department
	Percentage increase in total production of fodder in the state	Animal Husbandry & Veterinary Department
	Rice, wheat and coarse cereals produced annually per unit area (kg/Ha)	Agriculture & Farmers Welfare Department
	Percentage growth in average income of small-scale food producers, by sex and indigenous status	Agriculture & Farmers Welfare Department
	Distribution of soil health cards to 100% farmers by 2019	Agriculture & Farmers Welfare Department
	Increase net cropping intensity (Cropping intensity refers to raising of number of crops from the same field during one agricultural year; it can be expressed through a formula. $\text{Cropping Intensity} = \frac{\text{Gross Cropped Area}}{\text{Net Sown Area}} \times 100$ )	Agriculture & Farmers Welfare Department
	Percentage of indigenous species under conservation	Agriculture & Farmers Welfare Department
	Proportion of local breeds classified as being at risk, not-at-risk or at unknown level of risk of extinction	Animal Husbandry & Veterinary Department
	Increase in Agriculture orientation index	Agriculture & Farmers Welfare Department

SDG Goal	Indicator	Department
	Growth (percentage) in gross Agriculture expenditure Y-o-Y	Agriculture & Farmers Welfare Department
	Percentage of growth of export subsidy to agriculture exports	Agriculture & Farmers Welfare Department
	Consumer Price Index variation measured in Q-o-Q	Food Civil Supplies & Consumer Affairs
Goal 12. Ensure sustainable consumption and production patterns	Gross Global Food Loss Index (GFLI) in metric tones	Agriculture & Farmers Welfare Department
	Ratio of chemical fertilizers sold to ratio of crop production	Agriculture & Farmers Welfare Department
Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development	Ratio of maximum Sustainable Yield (MSY) in fishing to current yield	Fisheries Department
	Percentage increase in fish seed production	Fisheries Department

### 9.1.2 Indicators under Primary Sector and Assigned to Departments under Primary Sector

SI No.	Indicator	Baseline Data	Target
1	Per-capita milk yield per milk animal.	32.18 Kg/ Person	64 Kg/ Person
2	Per capita meat production.	11 Kg/ Person	22 Kg/ Person
3	Per capita egg production.	40.5 Nos/ Person	80 Nos/ Person
4	Farmers with surplus production to sell in the open market	No data available	To be defined
5	Percentage increase in total production of fodder in the state	No data available	To be defined
6	Rice, wheat and coarse cereals produced annually per unit area (kg/Ha)	2668.92 <sup>1</sup>	5033.34 <sup>2</sup>
7	Percentage growth in average income of small-scale food producers, by sex and indigenous status	No data available	To be defined

<sup>1</sup> Niti Aayog SDG Report 2018

<sup>2</sup> Niti Aayog SDG Target 2019

SI No.	Indicator	Baseline Data	Target
8	Distribution of soil health cards to 100% farmers by 2019	227109	500000
9	Increase net cropping intensity (Cropping intensity refers to raising of number of crops from the same field during one agricultural year; it can be expressed through a formula. $\text{Cropping Intensity} = \text{Gross Cropped Area} / \text{Net Sown Area} \times 100$ )	122	150
10	Percentage of indigenous species under conservation	No data available	To be defined
11	Proportion of local breeds classified as being at risk, not-at-risk or at unknown level of risk of extinction	No data available	To be defined
12	Increase in Agriculture orientation index	No data available	To be defined
13	Growth (percentage) in gross Agriculture expenditure Y-o-Y	No data available	To be defined
14	Percentage of growth of export subsidy to agriculture exports	No data available	To be defined
15	Gross Global Food Loss Index (GFLI) in metric tones	No data available	To be defined
16	Ratio of chemical fertilizers sold to ratio of crop production	No data available	To be defined
17	Ratio of maximum Sustainable Yield (MSY) in fishing to current yield	No data available	To be defined
18	Percentage increase in fish seed production	No data available	To be defined

### 9.1.3 Indicators under Primary Sector but marked to departments in Other Pillars

SI No.	Indicator	Department
1	Consumer Price Index variation measured in Q-o-Q	Food Civil Supplies & Consumer Affairs

## 9.1.4 Indicators Assigned to Other Pillars with Responsibility Marked to Departments under Primary Sector

S. No	Key indicators	Primary Responsible Department	Pillar
1	Annual growth rate in agriculture sector	Agriculture & Farmers Welfare	Entrepreneurship
2	Farmers with surplus crop production, enabled to be an entrepreneur	Agriculture & Farmers Welfare	Entrepreneurship

## 9.1.5 Targets identified by Departments under Primary Sector

S. No.	Target
1	Development of 1500 Ha individual ponds for Fish Culture by 2023.
2	Development of 50 Ha of community ponds for Fish Culture by 2023.
3	Adoption of MGNREGS Ponds for Aquaculture and Fisheries Activities.
4	Introduction of Paddy cum Fish Culture in 340 Ha in a cluster-based approach.
5	Establishment of 10 Nos of Fish Sanctuaries Annually.
6	Achieve Fish Seed Production of 15 Million annually through Establishment of additional 17 Nos. of FRP hatcheries annually till 2023.
7	Development of 50 Nos of Small-scale fish feed Mills over a period of 5 Years.
8	Production of 1100 MT of Raw Silk
9	Regular supply of Raw material to Weavers at Mill gate price, Supply of improve looms Technological Support (58 lakh square meter)
10	Increase investment in rural infrastructure, research & extension services, technology development and livestock gene banks in order to enhance livestock & poultry production in the State.
11	Providing Nutritional Security (1800 Kilocalories)
12	Increasing per capita consumption to 9 kg/per person per year through Fish Production of 27000 MT annually
13	Introduction of Modern Hygienic Fish Marketing Infrastructures a. 10 Nos. of Modern Hygienic Markets by 2023 b. 10 Nos. each of Special Fish Transportation Units (Insulated Vans, Refrigerated Vans, Oxygenated Vans.
14	Doubling farmers income by producing 317320 MT Rice by 2020-21
15	Compulsory de-worming of livestock & poultry to 100% by 2030
16	Enhance vaccination of livestock & poultry to 100% by 2030

## 9.2 As-Is Service Catalogue

Service Code	Service Name	Service Description	Service Delivery Channels	Service Classification	Locations at which this service is being offered	How frequently does the applicant need to avail this service
AFW .01	Assistance for Organic Adoption under State Mission Organic Scheme	Assistance for Organic Adoption is delivered through awareness, orientation and training, distribution of printed package of practices, organic off-farm inputs and creation of organic input generation facilities.	Offline	G2C	1. Block Office 2. District HQ	Annually
AFW .02	Providing assistance for Value Addition and Resource Conservation under NMSA (RAD) through Cluster approach	Assistance for Preparation of organic compost such as Berkeley compost, vermi compost and Pit composting.	PFMS	G2C	1. Village 2. Block Office 3. District HQ	Once in 5 yrs
AFW .03	Assistance for Establishment of new garden for fruit, plantation crops etc under MIDH	Mission envisage coverage of area under improved varieties of horticultural crops through area expansion of fruits, vegetables, plantation crops and other crops including spices, & aromatic plants. Cost of new plantations will however vary from crop to crop.	PFMS	G2C	1. Village 2. Block Office 3. District HQ	Annually
AFW .04	Assistance for Organic Certification under State Organic Mission	Assistance for Organic Certification through farmers organizations and distribution of ICS documents, Farmers training on ICS, Registration of ICS group with the Certification Body, Internal and External Audit followed by issue of scope certificate	Offline	G2C	1. Block Office 2. District HQ	Annually
AFW .05	Providing infrastructure for seed production by farmers' producer groups.	Construction of seed processing unit- cum- seed storage go down for strengthening and modernizing the infrastructure for seed production, storage, certification and quality control of certified seeds.	PFMS	G2G	1. District HQ	Once in a lifetime
AFW .06	Distribution of seeds through Seed Village Program under Sub-Mission of Seed and Planting Materials Scheme	Procurement and distributions of seeds.	PFMS	G2C	1. District HQ	Annually
AFW .07	Providing Financial Assistance for purchase of Agricultural Machineries & Equipments.	1. Sanctioning of Scheme & forwarding target distribution to Districts. 2. District Agriculture Officers invites applications from farmers. 3. District Agriculture Officers depute Agriculture Development Officers for on-site verification based on the following criteria:- i. An Applicant must be a bona-fide farmer. ii. He should have cultivable land at his disposal	Offline	G2C	1. State HQ 2. District HQ 3. Block Office	Once in 5 yrs

Service Code	Service Name	Service Description	Service Delivery Channels	Service Classification	Locations at which this service is being offered	How frequently does the applicant need to avail this service
		and registered in his name (in case the applicant does not own land, he is required to produce a certificate from the land owner allowing him to cultivate on the concerned plot). iii. The land should not be less than 5 Acres so as to justify the need of a Power Tiller under the Scheme.				
AFW .08	Providing assistance for Value Addition and Resource Conservation (infrastructure) through cluster Approach under NMSA (RAD)	Assistance for Construction of water harvesting structure such as check dam , canals for irrigation purposes.	PFMS	G2C	1. Village 2. Block Office 3. District HQ	Once in 5 yrs
AFW .09	Assistance for cultivation of high value flowers and vegetables under Protected cultivation under MIDH	Growing of Non-Traditional high Value Flowers and Vegetables under protected condition integrated with drip irrigation system in an area of 100 sqm-500 sqm.	Online	G2C	1. Village 2. Block Office 3. District HQ	Annually
AFW .10	Providing Financial Assistance for purchase of Agricultural Machineries & Equipments under SMAM.	1. Sanctioning of Scheme & forwarding target distribution to Districts. 2. District Agriculture Officers invites applications from farmers. 3. District Agriculture Officers depute Agriculture Development Officers for on-site verification based on the following criteria:- i. An Applicant must be a bona-fide farmer. ii. He should have cultivable land at his disposal and registered in his name (in case the applicant does not own land, he is required to produce a certificate from the land owner allowing him to cultivate on the concerned plot). iii. The land should not be less than 5 Acres so as to justify the need of a Power Tiller under the Scheme.	Public Financial Management System (PFMS)	G2C	1. State HQ 2. District HQ 3. Block Office	Once in 5 yrs
AFW .11	Sale of quality planting materials under Development and maintenance of orchards cum Horticulture nursery.	Production, multiplication & disbursement of temperate, tropical and sub-tropical quality planting materials like fruit plants & plantation crops(coconut, cashewnut )	offline	G2C	1. District HQ 2. Block Office	Annually
AFW .12	Sale of ornamental plants & cut flowers under Maintenance of Horti hub Scheme.	Raising of ornamental plants for supporting the spokes in and around the hub by selling planting materials like annual, bi-annual, perennial ornamental flowers and shrubs and collection of cut flowers from the spokes for marketing.	Offline	G2C	1. Block Office 2. District HQ	Quarterly
AFW .13	Distribution of Organic Manure under Organic Manure Scheme	Procurement of Organic Manure and distribution to the beneficiaries for Demonstration	Offline	G2C	1. Block Office	Annually

Service Code	Service Name	Service Description	Service Delivery Channels	Service Classification	Locations at which this service is being offered	How frequently does the applicant need to avail this service
					2. District HQ	
AFW .14	Assistance for Setting up of Nurseries of fruits, flowers and vegetables under the project scheme Article 275 (1) of the constitution of India	To cater the requirement of quality planting material within the district and neighboring areas which will include the procurement of seedlings, seeds for multiplication, construction of polyhouses for raising of seedlings, construction of water harvesting reservoir and construction of pack house	Offline	G2G	1. Village 2. Block Office 3. District HQ	Bi-annually
AFW .15	Daily Market Price Information on Agriculture/Horticulture Commodities	To provide the market price of Agriculture/Horticulture Commodities to the farmers, buyers, sellers and citizens on a daily basis. ADOs/HDOs/DEOs would do the entries in the portal on a daily/ weekly basis and on market days.	Online	G2C	1. Block Office 2. District HQ	Daily
AFW .16	Soil Health Card to Farmers	Soil health card provides the prescription to the farmers on how to use fertilizers for their crops grown in the soil which they have given for soil testing.	Hybrid (Application Offline and output online)	G2C	1. Block Office 2. District HQ	Once in 2 yrs
AFW .17	Creation of water harvesting structure under PMKSY-PDMC	Construction of Check dams/ponds etc with field canals/ piping network for conveyance of water	Through PFMS Online	G2G	1. State HQ	Only Once
AFW .18	Survey of land through Soil Survey Organization Scheme	Providing suitable land use recommendation of irrigation project, mapping of different soil types, generating data on the fertility status of soil etc.	0	G2C		Annually
AFW .19	Assistance for Creation of Water sources under MIDH	Water sources are created in the form of check dams to store water for farmers field cultivation or orchards on the farm for use all year round	Online	G2C	1. Village 2. Block Office 3. District HQ	Annually
AFW .20	Testing of seed samples collected from the farmers	Testing of seed for moisture content, germination %, purity	0	G2C		Annually
AFW .21	Providing inputs for Reclamation of Problem (Acid) Soil under RKVY Sub-Scheme	The Scheme aims at increasing crop production through Reclamation of acidic/ problem soils	Through PFMS	G2C	1. District HQ	Annually
AFW .22	Training to conduct crop cutting experiment (CCE)	To train the officers ( DAO/DHO/ADO/HDO/ATMA) on how to carry out (CCE)	Offline	G2G	1. District HQ 2. State HQ	Annually
AFW .23	Transfer of Funds to Allied Departments under RKVY	Fund received from GOI is transferred to Allied sectors i.e. Horticulture, AH & Vetty, Soil and Water conservation, Fisheries and Co-operative Societies for Infrastructure	Through PFMS	G2G	1. State HQ	Annually

Service Code	Service Name	Service Description	Service Delivery Channels	Service Classification	Locations at which this service is being offered	How frequently does the applicant need to avail this service
		Development, Production and Growth in Agriculture projects under RKVY.				
AFW .24	Crop Insurance under PMFBY	Providing subsidy on the premium of crop insurance paid by farmers	Offline	G2C		Bi-annually
AFW .25	Providing infrastructure under Rashtriya Krishi Vikas Yojana	Strengthening of Phodkylia Horticulture Farm / Construction of Godown/ Construction of Training Hall under South West Khasi Hills District, Mawkyrwat	PFMS	G2G	1. District HQ	Annually
AFW .26	Sale of Tree saplings under Sub Mission on Agro-Forestry .	Raising of Forest/Fruit saplings in Public & Private nurseries and sale at subsidized rate.	offline	G2C	1. Village 2. Block Office 3. District HQ	Annually
AFW .27	Spices Development Scheme	Procurement of Machineries and equipment	Offline	G2G	1. District HQ	Annually
AFW .28	Training and awareness campaign under PMFBY	Conducting training and awareness programme for farmers organized by Directorate of Agriculture in co-ordination with concerned implementing Insurance Company.	Offline	G2C	1. District HQ 2. State HQ	Annually
AFW .29	Assistance for production of planting materials in nurseries , existing coconut plants and compost making	Production & disbursement of quality coconut seedlings to farmers and assistance for existing coconut plants and compost making.	RTGS	G2C	1. Village 2. Block Office 3. District HQ	Annually
AFW .30	Assistance for planting of sweet potato, colocasia under Tuber Crop development scheme.	Farmers are provided assistance either in kind/cash to improve/promote cultivation of sweet potato/colocasia/tapioca.	Offline	G2C	1. Block Office 2. District HQ	Annually
AFW .31	Sale of flower seeds and seedlings at Govt. farm under Floriculture development scheme	Raising of flowers seeds and seedling for sale to public and for using in the farm	Offline	G2G	1. District HQ	Annually
AFW .32	Disbursement of planting materials in convergence with C&RD dept. under fruit development scheme	Distribution and planting of fruit saplings of farmers selected for convergence with MNREGA	Offline	G2C	1. Block Office	Once in a life time
AFW .33	Assistance for planting of sweet potato, colocasia under Tuber Crop development scheme.	Farmers are provided assistance either in kind/cash to improve/promote cultivation of sweet potato/colocasia/tapioca.	Offline	G2C	1. Block Office 2. District HQ	Annually
AFW .34	Training services under BATC Scheme.	Imparting training to educated rural unemployed youths for self-employment on farm based activities.	offline	G2C		Annually
AFW .35	Release of promising varieties\lines of different crops under Agri Research Station and Labs Scheme.	Field experimental trails on different crops in various locations for studying the adaptability, Suitability and performance of different	Offline	G2C		Annually

Service Code	Service Name	Service Description	Service Delivery Channels	Service Classification	Locations at which this service is being offered	How frequently does the applicant need to avail this service
		varieties under different conditions.				
AFW .36	Training under Agriculture Census Scheme	Training on collection of crop census data	Offline	G2E	1. Block Office 2. District HQ 3. State HQ	Annually
AFW .37	Distribution of Wire Mesh and Polythene Sheets for Preparation of 18 Days Organic compost under Organic Manure Scheme	Production of organic manure for the farmer's use and to create an income generating activity	In kind through approved suppliers	G2C	1. Block Office 2. District HQ	Annually
AFW .38	Training on cultivation of mushroom & compost making	The center provides training on cultivation of oyster & button mushroom and compost making for button mushroom through classroom training and demonstration in actual laboratory condition and farmers field.	offline	G2C	1. State HQ	As and when required
AFW .39	Disbursement of seeds under NFSM	Approval of funds, procurement and disbursement of seeds under National Food Security Mission	Mainly offline, fund disbursement is through PFMS	G2C	1. Block Office 2. District HQ	Quarterly
AFW .40	Assistance for Establishment of small nurseries for fruit plants under MIDH	Assistance provided for setting up of small nurseries in 1 Ha. area both in Public and private Sector for production of 25,000 plants per hectare of mandated perennial vegetatively propagated fruit plants/Spices/plantation crops/aromatic duly certified for its quality. Nurseries will be encouraged for accreditation and avail assistance for up-gradation of nurseries to meet the accreditation norms.	PFMS	G2C	1. Village 2. Block Office 3. District HQ	Only Once
AFW .41	Sale of processed products	Utilization of surplus fruits and vegetables and conversion of the same into marketable processed products. The processed food products which ranges from squashes, jams, jellies, RTS, drinks, marmalades, canned fruits, etc. are marketed under the brand name MEG. Consumers can buy Meg products at the MEG Retail outlet and the Fruit Preservation Centre Shillong and Dainadubi.	Offline	G2C	1. District HQ	Daily
AFW .42	Training Services under Organic Manure Scheme.	Creating awareness and imparting motivational training programme on the importance	Offline	G2C	1. Block Office	Annually

Service Code	Service Name	Service Description	Service Delivery Channels	Service Classification	Locations at which this service is being offered	How frequently does the applicant need to avail this service
		of organic farming and production of ready on-farm manure through 18 days composting			2. District HQ	
AFW .43	Information Services under Agri/Hort Information Scheme	Disseminating information on scientific methods of cultivation to extension staff and farming community through media such as pamphlets, leaflets, radio, television etc and participating/holding awareness programmes by means of exhibition, seminar etc.	online and offline	G2C	1. District HQ 2. State HQ	Monthly
AFW .44	Cluster Demonstration and Training Through NFSM	Approval of funds, dissemination and training of technology under National Food Security Mission	Mainly offline, fund disbursement is through PFMS	G2C	1. Village 2. Block Office 3. District HQ	Quarterly
AFW .45	Training of farmers under SMSP Scheme	Imparting training and awareness program on new technologies for increasing production & productivity of quality seeds.	PFMS	G2C	1. District HQ	Annually
AFW .46	Income support to farmers through Pradhan Mantri Kisan Samman Nidhi (PMKISAN)	Financial assistance to land holding farmers @ Rs 6000 in 3 Installments	PFMS	G2C	1. Village 2. Block Office 3. District HQ	Annually
AFW .47	Supplies of Machineries and Equipment under NFSM	Approval of fund, procurement and supplies of Machineries such as Conoweeder, Manual Sprayer, pipes etc to Farmers	Offline, fund disbursement is through PFMS/D BT	G2C	1. District HQ 2. State HQ	Quarterly
AFW .48	Distribution of vegetable seeds under Vegetable Development Scheme	Procurement and distribution of vegetable seeds	Offline	G2C	1. Block Office 2. District HQ	Quarterly
AFW .49	Processing of fruits	Utilization of surplus fruits and vegetables and conversion of the same into marketable processed products.	Offline	G2G	1. District HQ	Annually
AFW .50	Providing training under Soil Health Management	Training programme on balance use of organic fertilizer	PFMS	G2G	1. District HQ	Annually
AFW .51	Transfer of funds under National Bamboo Mission	Fund received from GOI under National Bamboo Mission is transferred to Soil and water conservation Department for implementation of services under the project.	Online	G2G		Annually
AFW .52	Training services under Ramie Development Scheme	Training on Pre harvest and Post-Harvest technologies for development of Ramie crop.	Manual	G2C	1. Village 2. Block Office 3. District HQ	Bi-annually

Service Code	Service Name	Service Description	Service Delivery Channels	Service Classification	Locations at which this service is being offered	How frequently does the applicant need to avail this service
AFW .53	Supply of inputs (Planting Materials, FYM, bio pesticides and decortication Machine) under Ramie Development Scheme	Procurement of Planting Materials, FYM, bio pesticides and decortication machine.	Manual	G2C	1. Village 2. Block Office 3. District HQ	Annually
AFW .54	Distribution of bio pesticide and bio agent under plant protection scheme	Procurement of Bio pesticide and bio agent and distribution to the farmers	Offline	G2C	1. District HQ	Bi-annually
AFW .55	Sale of spawn and compost under the Scheme Regional Center for training and production of Mushroom	Production and disbursement of spawn (oyster & button mushroom) and compost for button mushroom	Offline	G2C		Bi-annually
AFW .56	Training of farmers under Farmers' Institute Scheme.	Educating and creating awareness to farmers on modern technologies, organic and improved methods of cultivation etc through training and demonstration.	Offline	G2C	1. Village 2. Block Office 3. District HQ	Annually
AFW .57	Providing Stipend, Book grant, Prorata Contribution etc under Agri Studies Scheme	Sponsoring students for undergoing 4 yrs BSc Agri/Hort course against State quota.	Offline	G2C		Annually
AFW .58	Providing Agri, Horti and Agro- Forestry inputs (planting materials) under National Mission for Sustainable Agri (RAD) Scheme.	Promotion of Integrated Farming System through National Mission for Sustainable Agri (RAD).	PFMS	G2C	1. Village 2. Block Office 3. District HQ	Annually
AFW .59	Training of farmers under NMSA (RAD)	Imparting taring and awareness programme to the farmer for sustainable agriculture on a cluster approach.	PFMS	G2C	1. Village 2. Block Office 3. District HQ	Annually
AFW .60	Sale of Seeds and Seedlings in Govt. run farm under vegetable development scheme	Raising of vegetable seeds and seedlings for sale to the public	Offline	G2G	1. District HQ	Annually
AFW .61	Distribution of Agriculture inputs under State Rice Mission	Procurement and distribution of high yielding, hybrid and local improved varieties of paddy seeds, Bio Pesticides and Bio Fertilizers to farmers.	Manual	G2C	1. District HQ	Annually
AFW .62	Assistance for Beekeeping under MIDH	Honey bee colony, hives and equipments are provided to farmers for their orchards for better pollination of fruit trees in order to get better production and also to supplement their income by selling honey.	PFMS	G2C	1. Village 2. Block Office 3. District HQ	Annually
AFW .63	Providing livestock such as Cross breed Cows, pigs, chicks under NMSA (RAD) Scheme.	Promotion of Integrated Farming System (IFS) on a cluster approach through NMSA (RAD) Scheme.	PFMS	G2C	1. Village 2. Block Office 3. District HQ	Once in 5 yrs

Service Code	Service Name	Service Description	Service Delivery Channels	Service Classification	Locations at which this service is being offered	How frequently does the applicant need to avail this service
AFW .64	Assistance for Infrastructure development for providing Rope ways under RKVY	Assisting farmers to transport the agriculture produce from the low lying areas to the upland through rope ways thereby improving their economic condition.	Through PFMS	G2C	1. District HQ	Annually
AFW .65	Assistance to farmers for trellis on biskot/ other creeper vegetables under vegetable Development Scheme.	Trellis making for biskot and other creeper vegetables	manual	G2C	1. Block Office 2. District HQ	Annually
AFW .66	Providing infrastructure for Integrated post-harvest management (Functional pack house under MIDH)	Building infrastructure for progressive farmers to store their harvested products and later they can market them on time so that storage facilities are available to them.	PFMS	G2C	1. Village 2. Block Office 3. District HQ	Annually
AFW .67	Providing Machinery and Equipment under Soil Health Management Scheme	Procurement of Machinery and Equipment for setting up of static Soil Testing Lab, strengthening of existing Soil Testing Labs and setting up of Bio Control Labs	PFMS	G2G	1. District HQ	Once in a lifetime
AFW .68	Farmers' Training under State Rice Mission.	Training of Farmers on Berkeley Composting Methods.	Manual	G2C	1. Village 2. Block Office 3. District HQ	Annually
AFW .69	Providing Scholarship and stipend through BATC Scheme	a) providing stipend cum lodging allowance to Educated unemployed youths of the State who participate in the 3 months training on Farm based activities. b) providing assistance as seed money on completion of the programme c) Educated unemployed youths of the State who own land are eligible to apply for this service.	Offline	G2C		Annually
AFW .70	Disbursement of bio pesticides and bio agents under Plant Protection Scheme	Procurement and distribution of Bio pesticides and bio agents .	Offline	G2C	1. Block Office 2. District HQ	Bi-annually
AFW .71	Providing Machinery through RKVY	The scheme will help increasing the productivity and production of the agriculture by achieving timeliness in farm operations	Through PFMS	G2B	1. State HQ	Annually
AFW .72	Sale of vegetable seeds and seedlings	Raising and sale of vegetable seeds and seedlings at Govt. farm	Offline	G2C	1. State HQ	Annually
AFW .73	Assistance for Value Chain Production under MOVCD for North East Region	The vendor(Service provider) procures the off farm inputs & planting materials and disburse the same to the clusters for development of Organic Production Clusters.	Offline	G2C	1. Block Office 2. District HQ	Annually
AFW .74	Community canning	Any individual who has surplus raw materials (fruits) from their	Offline	G2C	1. District HQ	Annually

Service Code	Service Name	Service Description	Service Delivery Channels	Service Classification	Locations at which this service is being offered	How frequently does the applicant need to avail this service
		orchards/farms can bring them for processing into their desired final product.				
AFW .75	Assistance for Value chain Processing Under Mission Organic Value Chain Development for North East Region.	Financial assistance for setting up of Integrated Processing unit.	offline	G2C	1. District HQ	Annually
AFW .76	Distribution of Bio-pesticides and Bio agents for Demonstration under Plant Protection Scheme	Procurement and distribution of Bio-pesticides and Bio agents to the beneficiaries for demonstration	Offline	G2C	1. Block Office 2. District HQ	Annually
AFW .77	Assistance for rejuvenation of Citrus orchard under MIDH	Distribution of inputs for rejuvenation of Khasi mandarin	Offline	G2C	1. Block Office 2. District HQ	Once in 3 yrs
AFW .78	Wages to Muster Rolls (Skilled, Un-skilled and semi-skilled)	The wages disbursed to the employees in the Fruit preservation center	Offline	G2E	1. District HQ	Monthly
AFW .79	Distribution of Potato quality seeds under Tuber Crop development scheme	Procurement and distribution of quality potato seeds to potato growers.	Offline	G2C	1. Block Office 2. District HQ	Annually
AFW .80	Training to AWS(Automatic Weather Station) Operators under Agriculture Economics and Statistics.	Imparting hands on training for operation & maintenance of AWS.	Offline	G2E	1. District HQ 2. State HQ	Annually
AFW .81	Assistance for Kiwi/grapes/passion fruit plantation under fruit development scheme	Purchase of planting materials and trellis with angle T bar iron post.	Offline	G2C	1. Block Office 2. District HQ	As and when required
AFW .82	Assistance for Protected cultivation under vegetable development scheme	Construction of green house in farmers field	Offline	G2C	1. Block Office 2. District HQ	Once in 10 yrs
AFW .83	Assistance for Setting up of pineapple stockyard and mini processing unit under the project scheme article 275(1) of the constitution of India	Pineapple stockyard will be established at Mawphrew village thereby helping the farmers in assimilating their produce for easier transporting, marketing and also to create a pineapple stock pile to be utilized as raw material in mini processing unit. The mini processing unit will serve as food processing and value addition with the core objective of providing sustainable livelihood to the pineapple growers of Mawphrew village ribhoi district	Offline	G2C	1. Village 2. Block Office 3. District HQ	Bi-annually
AFW .84	Disbursement of saplings under Fruit development scheme	Procurement and disbursement of fruit saplings(temperate, sub-tropical & tropical) for fruit plantation	Offline	G2C	1. District HQ	Once in 10 yrs

Service Code	Service Name	Service Description	Service Delivery Channels	Service Classification	Locations at which this service is being offered	How frequently does the applicant need to avail this service
AFW .85	Sale of Planting material (Ginger Rhizome).	Production and sale of Ginger rhizome.	offline	G2C		Annually
AFW .86	Assistance for cultivation of flowers in protected cultivation under Floriculture development scheme	Construction of polyhouse at farmers field for planting of commercial flowers through the service provider approved by the dept.	Offline	G2C	1. Block Office 2. District HQ	Once in 10 yrs
AFW .87	Training to farmers under Agricultural Marketing Scheme	Imparting training to farmers on post harvesting technology etc of horticulture products	Offline	G2C	1. Block Office 2. District HQ	As and when required
AFW .88	Training to farmers under Agricultural Marketing Scheme	Imparting training to farmers on post harvesting technology etc and marketing of horticulture products	Offline	G2C	1. Block Office 2. District HQ	As and when required
AFW .89	Assistance for purchase of Plant Protection equipment under Plant protection scheme	Procurement and disbursement of Plant Protection equipments.	Offline	G2C	1. Block Office 2. District HQ	As and when required
AFW .90	Assistance for Value Chain Production under Mission Organic Value Chain Development for North East Region	Support for extension services, input facilitation, training handholding and certification @10000/hac	PFMS	G2C	1. Block Office 2. District HQ	Annually
AFW .91	1917 iTEAMS Agro Advisory, Market Connect and Transport Logistics	Providing farmers with timely and accurate information for proper decision making. Farmers can call the toll free number of 1917 for any queries related to Agriculture, Horticulture, Fisheries, Animal Husbandry, Apiculture and Sericulture; Providing information about potential markets and sellers and making farmers and buyers aware of the different selling / buying options available to them. 1917iTEAMS connects the registered Farmers having commodities to sell to the registered Buyers; Providing evacuation and transportation logistics solutions to the farmers and buyers who wish to transport their goods to any farms or markets of their choice through a network of pickup trucks which are known as Agri-Response Vehicles (ARVs) at a highly competitive rate of Rs. 0.02 per kg / km.	Toll Free Telephone Number 1917, SMS, Field Coordinators	G2C	1. Village 2. Block Office 3. District HQ 4. State HQ	Daily
AFW .92	ICT Services under National e-Governance Scheme for Agriculture (NeGP-A)	Improved Access of farmers to timely and relevant information during crop cycle	Website, Web Portal, SMS, Common	G2C	1. Block Office 2. District HQ 3. State HQ	Monthly

Service Code	Service Name	Service Description	Service Delivery Channels	Service Classification	Locations at which this service is being offered	How frequently does the applicant need to avail this service
			Service Centre, Internet Kiosk			
AFW .93	Assistance for purchase of post-harvest management tools and implements under Agricultural Marketing Scheme	Sale of post-harvest management tools and implements to farmers and entrepreneur.	Offline	G2C	1. Village 2. Block Office 3. District HQ	Annually
AFW .94	Sale of Meg products and other Produce of Meghalaya through Meg Sale Outlet	Procuring and selling of Meg products, Meg Tea, Cashewnuts and other products of the State.	offline	G2C		Daily
AFW .95	Farmers' Training Programme through State Bio-control Lab	Promotion of bio-agents such as Trichoderma, Beauveria, Melanchizium, Trichogramma etc as control measures against pest+disease in plants	Offline	G2C		Quarterly
AFW .96	Exposure trip for award winning/progressive farmers under Farmers Institute scheme	Award winning/ progressive farmers are taken for exposure visits/study tour to Agriculture Research Stations, Agriculture Universities, farm etc.	Offline	G2C		Annually
AFW .97	Providing Agricultural Machineries and Equipments on hire through Departmental Custom Hiring Centers under Agriculture Engineering (Mechanical/Workshop) Scheme	Procurement/ Operation/ Maintenance of Agricultural Machineries and Equipments on hire 1. An Applicant must be a bona-fide farmer. 2. He should have cultivable land at his disposal and registered in his name (in case the applicant does not own land, he is required to produce a certificate from the land owner allowing him to cultivate the concerned plot). 3. The land should not be less than 5 Acres so as to justify the need of a Power Tiller under the Scheme.	offline	G2C	1. Block Office 2. District HQ	Annually
AFW .98	Distribution of Plant Protection equipment at 50% subsidy under Plant Protection Scheme	Procurement of Plant Protection equipments distribution of the same at 50% subsidy	Offline	G2C	1. Block Office 2. District HQ	Annually
AFW .99	Training on value addition of fruits and vegetables	To disseminate technical information on food processing to the entrepreneurs/farmers/ interns/students/SHG/FPO. Interested citizens can avail this service.	Offline	G2C	1. District HQ	Annually
AFW .100	Exhibition/ Festivals/ Shows (Mela)	Exhibitions of Horticulture produce/products by farmers/ Entrepreneurs	Offline	G2B		
AFW .101	North East Food Show	The North-East Food Show is an opportunity for entrepreneurs of the North-East to meet and interact with National & Global majors of the Food & Beverage	Offline	G2B		

Service Code	Service Name	Service Description	Service Delivery Channels	Service Classification	Locations at which this service is being offered	How frequently does the applicant need to avail this service
		Industry to better understand, build connections, anticipate consumer needs and familiarize themselves with the latest trends in the industry for export promotion and up-scaling their businesses to global standards. The entrepreneurs/ firms/ companies who wish to participate in the B2B platform can fill in the application form either through online or offline mode with the due payment as stall charges. Any National or International firm/ enterprise/ company can avail this service.				
AHS. 01	Distribution of Piglets	The department has 13 pig farms for producing improved breeds like introduced Hampshire, Saddle Back and other Cross Breed Pigs for supplying piglets inputs for supplying to the farmers to generate employment and for upgradation of local indigenous stock so that production level is enhanced. Also, to improve the economic livelihood of the rural poor and landless labours.	Offline	G2C	1. Village 2. State HQ 3. Block Office 4. District HQ	Annually
AHS. 02	Treatment of ailing Animals and Birds	A network of Veterinary Hospitals and Dispensaries manned by qualified Veterinarian have been established in the State for undertaking treatment of ailing animals and birds. At present the Department has a network of 4 Hospitals and 114 Veterinary Dispensaries besides 15 Mobile Dispensaries and 7 Vigilance Unit for Animal Health Care.	Offline	G2C	1. Village 2. State HQ 3. Block Office 4. District HQ	As and when required
AHS. 03	Artificial insemination for Cattle Breeding	For all round development of Cattle wealth in the different parts of the State, various development programmes such as Cattle Breeding Farms for producing inputs for distribution are established. Four Cattle breeding farms e.g. Indo Danish Project, Upper Shillong, (East Khasi Hills); Regional Cross Bred Cattle Breeding Farm, Kyrdekulai (Ri Bhoi district); Cattle Farm, Khliehtyrshi, (Jaintia Hills district) and Livestock Farm, Rongkhon (West Garo Hills) have been established to produce improved breeding stock for development	Offline	G2C		As and when required

Service Code	Service Name	Service Description	Service Delivery Channels	Service Classification	Locations at which this service is being offered	How frequently does the applicant need to avail this service
		of cattle in the State to boost up production of milk				
AHS. 04	Intensive Cattle Development Projects	The Intensive Cattle Development Project, one at Upper Shillong and the other at Tura, have been established in the State to take up an integrated approach in development of cattle breeding, fodder development etc. The objective of the project is to upgrade the local cows through introduction of better germplasm of the exotic Friesian and Jersey breeds and to induct the local tribal breeders to adopt modern scientific techniques in Animal Husbandry.	Offline	G2C	1. Village 2. State HQ 3. Block Office 4. District HQ	Daily
AHS. 05	Care and management of piglets	The eligible beneficiaries for pig farming are trained for proper scientific care and management from the stage of piglets to adulthood (either for breeding or fattening purpose).	Offline	G2C	1. Village 2. State HQ 3. Block Office 4. District HQ	Annually
AHS. 06	Training of farmers in poultry and dairy farming	The object of the scheme is to impart training to farmers, beneficiaries on improved livestock and poultry farming, proper management, feeding and health care of livestock and poultry. The Department has established 6 Vocational training Centers to conduct training to farmers.	Offline	G2C	1. State HQ 2. District HQ	Bi-annually
AHS. 07	Providing Demonstration & training to internal staff	The Cattle Breeding Farms also serve as the visual demonstration units in scientific method of rearing, feeding and management of cattle which includes fodder cultivation.	Offline	G2E		Once in 5 yrs
AHS. 08	Poultry Development Programme	The Poultry Development Programme of the State has, therefore, been directed towards increasing productivity of the poultry of the State by introducing improved breeds. The Department has set up Poultry Farms. The objective of these farms is to serve the purpose of experimentation, demonstration and production of eggs beside the main purpose for rearing chicks for distribution amongst the poultry rearers.	Offline	G2C	1. State HQ 2. District HQ	Bi-annually
AHS. 09	Grant in Aid and Subsidies Livestock farmers	For peoples participation in production, incentives in the form of Grant in Aid and Subsidies are provided so that	Offline	G2C	1. State HQ 2. Block Office	Bi-annually

Service Code	Service Name	Service Description	Service Delivery Channels	Service Classification	Locations at which this service is being offered	How frequently does the applicant need to avail this service
		production status is enhanced to meet the state demands			3. District HQ	
AHS. 10	Preventive measures through vaccination	The Veterinary hospitals and dispensaries are taking preventive measures through vaccination for controlling specific diseases.	Offline	G2C	1. Village 2. State HQ 3. Block Office 4. District HQ	As and when required
AHS. 11	Application for Casual Leave	Officers and cadres can apply for casual leave to the respective senior DDOs	Offline	G2E	1. State HQ 2. Block Office 3. District HQ	As and when required
FIS.0 1	Financial and Technical Assistance for Establishment of fish Hatcheries	Any individual of the state except(Central/State Govt. Employee), with a water area of at least 0.1 Ha	Manual	G2B	1. District HQ	Once in a lifetime
FIS.0 2	Financial and Technical Assistance for Construction of Individual Fish Ponds	Fish pond construction . -Any citizen of Meghalaya state can apply for it -Govt. Employees ( both state and center) can't apply for it. -Landholding should be min. 0.1 Hac & max 1 Hac	Manual	G2B	1. District HQ	Once in a lifetime
FIS.0 3	Financial Assistance for Establishment of Fish Sanctuary	Community based organization which focuses on conversational of indigenous species with strict regulation on ban on any fishing practices in rivers/stream/etc.,	Manual	G2B	1. District HQ	Once in a lifetime
FIS.0 4	Financial Establishment of Aqua-park	Community based organization which focuses on conversational of indigenous species with strict regulation on ban on any fishing practices in rivers/stream/etc. Water area of 1 Hectare	Manual	G2C	1. District HQ	Once in a lifetime
FIS.0 5	Financial Assistance for Mobile Fish Retail Units	Any individual of the state except(state/govt. employee) , with a land holding of at least 500 Sq. Ft.	Manual	G2B	1. District HQ	Once in a lifetime
FIS.0 6	Financial and Technical Assistance for establishment of Fish Feed Mills	Any individual of the State except(State/Central Govt. Employee), with land area of at least 0.1 Ha.	Manual	G2B	1. District HQ	Once in a lifetime
FIS.0 7	Financial and Technical Assistance for the Construction of Community Ponds	Community based organization which focuses on culture and rearing of fish species with a water area of at least 0.5 Hectare	Manual	G2B	1. District HQ	Once in a lifetime
FIS.0 8	Financial Assistance for Paddy cum fish Culture	Any individual of the state except(Central/State Govt. Employee), with a water area of at least 0.1 Ha	Manual	G2B	1. District HQ	Once in a lifetime
FIS.0 9	Financial Assistance for Renovation of Individual and Community Ponds	Damage pond, already assisted/not assisted	Manual	G2B	1. District HQ	Once in a lifetime
FIS.1 0	Financial and Technical Assistance for	Any individual of the State except(State/Central Govt.	Manual	G2B	1. District HQ	Once in a lifetime

Service Code	Service Name	Service Description	Service Delivery Channels	Service Classification	Locations at which this service is being offered	How frequently does the applicant need to avail this service
	Establishment of Fiberglass Reinforced Plastic Hatcheries	Employee) with a land area of at least 0.1 Ha				
FIS.1 1	Financial Assistance for construction of Modern Hygienic Fish Markets & Retail Kiosks	Cooperative Societies, with a land area of at least 0.1 Ha.	Manual	G2B	1. District HQ	Once in a lifetime
FIS.1 2	Input Distribution	Any Citizen/Beneficiaries who has an existing pond or a newly constructed project can avail this services.	Manual	G2C	1. District HQ	As and when required
FIS.1 3	Product Selling	Any Individual/Society/SHG can avail this service beside having a good connection with the beneficiaries for the supply of Fish for selling in the retail outlet.	Manual	G2C	1. District HQ	Once in a life time
FIS.1 4	Training	Any Citizen who already have a fish pond and has interest in Fish Farming can avail this service. Beneficiaries who are assisted under the scheme will have to undergo training at MSFRTI institute.	Manual	G2C	1. District HQ	As and when required
FIS.1 5	Supply Chain	Any Individual/Society/SHG can avail the schemes.	Manual	G2B	1. District HQ	Once in a life time
TEX. 01	Assistants for construction of mounting hall	Construction of mounting for spinning of cocoons at the farmers. Sericulture Farmers having plantation and rearing activities.	District Sericulture Office	G2C	1. District HQ	Annually
TEX. 02	Support for fencing of mulberry plantation	Fencing of plantation. Sericulture farmers having Mulberry plantation.	District Sericulture Office.	G2C	1. District HQ	Annually
TEX. 03	Engagement of Textiles Designers	Textile Designers. Degree from NIFT/NID/Textiles from recognized Institution/Diploma in IIHT.	District Handloom Office	G2C	1. District HQ	Annually
TEX. 04	Plantation of Mulberry, Eri and Muga	Plantation Development Sericulture Farmers having plot of land	District Sericulture Office	G2C	1. District HQ	Annually
TEX. 05	Assistant for construction of Grainages	Construction of Grainage for production of Dfls. Sericulture farmers having plot of land.	District Sericulture Office	G2C	1. District HQ	Annually
TEX. 06	Supply of rearing appliances	Supplies of rearing appliances to Sericulture farmers. Sericulture farmers having plantation.	District Sericulture Office	G2C	1. District HQ	Annually
TEX. 07	Assistant for construction of workshed	Construction of workshed for weavers. Weavers having loom.	District Handloom office	G2C	1. District HQ	Annually
TEX. 08	Strengthening of Silk Reeling Unit	Marketing Support to Sericulture farmers. Sericulture farmers of Meghalaya.	Reeling Unit/Spinning Centers	G2C	1. District HQ	Weekly

Service Code	Service Name	Service Description	Service Delivery Channels	Service Classification	Locations at which this service is being offered	How frequently does the applicant need to avail this service
			at the District office			
TEX. 09	Support for Vermi Compost shed	Construction of Vermi Compost shed. Sericulture farmers having plantation.	District Sericulture Office	G2C	1. District HQ	Annually
TEX. 10	Sale of Yarn through Mini Yarn Bank	Sale of Yarn to the Private Weavers at Millgate Price for Private Weavers having own Looms	District Offices	G2C	1. District HQ	As and When Required
TEX. 11	Assistant for construction of rearing houses	Construction of rearing houses for silkworm rearing. Sericulture farmers having plantation.	District Sericulture Office	G2C	1. District HQ	Annually
TEX. 12	Support for Kissan Nursery	Establishment of Nurseries for production of saplings, seedlings. Sericulture farmers having plot of land.	District Sericulture Office	G2C	1. District HQ	Annually
TEX. 13	Distribution of Chowki worms and Silkworm eggs	Distribution of chowki reared worms and silkworm eggs to the sericulture farmers . Sericulture Farmers	Offline	G2C	1. District HQ	As and When Required
TEX. 14	Establishment of Handloom Weaving Training Centre	Imparting Training on handloom. Unemployed youth of the State	Zonal Officer (Weaving)	G2C	1. District HQ	Annually
TEX. 15	Supply of Yarn to the Weavers	Distribution of yarns free of cost to Private Weaver Eligibility: Weavers of the state of Meghalaya having his/her own Looms .	District Offices	G2C	1. District HQ	Annually

## 9.3 Rationalized Service Catalogue

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
AFW.01	Assistance for Organic Adoption under State Mission Organic Scheme	Assistance for Organic Adoption is delivered through awareness, orientation and training, distribution of printed package of practices, organic off-farm inputs and creation of organic input generation facilities.	G2C	Training	No	AFW.04, 28, 34, 38, 42, 44, 45, 50, 52, 56, 59, 68, 88, 95, 99	Provide Training and Awareness to Farmers	All training services will be applied from a single link. System will maintain the eligibility scheme wise and farmer wise
AFW.02	Providing assistance for Value Addition and Resource Conservation under NMSA (RAD) through Cluster approach	Assistance for Preparation of organic compost such as Berkeley compost, vermi compost and Pit composting.	G2C	Financial Assistance	No	AFW.03, 08, 09, 19, 40, 64, 65, 66, 82, 86	Financial Assistance for Establishment of Agriculture Infrastructure	Services related to Assistance in Infrastructure Development are merged
AFW.03	Assistance for Establishment of new garden for fruit, plantation crops etc under MIDH	Mission envisage coverage of area under improved varieties of horticultural crops through area expansion of fruits, vegetables, plantation crops and other crops including spices, & aromatic plants. Cost of new plantations will however vary from crop to crop.	G2C	Financial Assistance	Yes	AFW.02		
AFW.04	Assistance for Organic Certification under State Organic Mission	Assistance for Organic Certification through farmers organizations and distribution of ICS documents, Farmers training on ICS, Registration of ICS group with the Certification Body, Internal and External Audit followed by issue of scope certificate	G2C	Training	Yes	AFW.01		
AFW.05	Providing infrastructure for seed production by farmers' producer groups.	Construction of seed processing unit- cum- seed storage go down for strengthening and modernizing the infrastructure	G2G	Financial Assistance	No			

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
		for seed production, storage, certification and quality control of certified seeds.						
AFW.06	Distribution of seeds through Seed Village Program under Sub-Mission of Seed and Planting Materials Scheme	Procurement and distributions of seeds.	G2C	Inputs Distribution	No	AFW.32 , 39, 48, 79, 84	Distribution of Seeds to Farmers	Services distributing seeds under different schemes are merged.
AFW.07	Providing Financial Assistance for purchase of Agricultural Machineries & Equipments.	1. Sanctioning of Scheme & forwarding target distribution to Districts. 2. District Agriculture Officers invites applications from farmers. 3. District Agriculture Officers depute Agriculture Development Officers for on-site verification based on the following criteria:- i. An Applicant must be a bona-fide farmer. ii. He should have cultivable land at his disposal and registered in his name (in case the applicant does not own land, he is required to produce a certificate from the land owner allowing him to cultivate on the concerned plot). iii. The land should not be less than 5 Acres so as to justify the need of a Power Tiller under the Scheme.	G2C	Financial Assistance	No	AFW.62 , 89, 93	Financial Assistance for Purchase of Machinery	Services related to financial assistance for Purchase of Machinery and Equipments are merged
AFW.08	Providing assistance for Value Addition and Resource Conservation (infrastructure) through cluster Approach under NMSA (RAD)	Assistance for Construction of water harvesting structure such as check dam , canals for irrigation purposes.	G2C	Financial Assistance	Yes	AFW.02		
AFW.09	Assistance for cultivation of high value flowers and vegetables under	Growing of Non-Traditional high Value Flowers and Vegetables under protected condition integrated with drip	G2C	Financial Assistance	Yes	AFW.02		

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
	Protected cultivation under MIDH	irrigation system in an area of 100 sqm-500 sqm.						
AFW.10	Providing Financial Assistance for purchase of Agricultural Machineries & Equipments under SMAM.	1. Sanctioning of Scheme & forwarding target distribution to Districts. 2. District Agriculture Officers invites applications from farmers. 3. District Agriculture Officers depute Agriculture Development Officers for on-site verification based on the following criteria:- i. An Applicant must be a bona-fide farmer. ii. He should have cultivable land at his disposal and registered in his name (in case the applicant does not own land, he is required to produce a certificate from the land owner allowing him to cultivate on the concerned plot). iii. The land should not be less than 5 Acres so as to justify the need of a Power Tiller under the Scheme.	G2C	Financial Assistance	Yes			34 (Duplicate AFW.07)
AFW.11	Sale of quality planting materials under Development and maintenance of orchards cum Horticulture nursery.	Production, multiplication & disbursement of temperate, tropical and sub-tropical quality planting materials like fruit plants & plantation crops(coconut, cashewnut )	G2C	Product Selling	No	AFW.12 , AFW.26 , AFW.31 , AFW.55 , AFW.60 , AFW.85	Sale of Planting Materials	All services related to sale of planting materials are merged
AFW.12	Sale of ornamental plants & cut flowers under Maintenance of Horti hub Scheme.	Raising of ornamental plants for supporting the spokes in and around the hub by selling planting materials like annual, bi-annual, perennial ornamental flowers and shrubs and collection of cut	G2C	Product Selling	Yes	AFW.11		

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
		flowers from the spokes for marketing.						
AFW.13	Distribution of Organic Manure under Organic Manure Scheme	Procurement of Organic Manure and distribution to the beneficiaries for Demonstration	G2C	Inputs Distribution	No		Distribution of Organic Manure	
AFW.14	Assistance for Setting up of Nurseries of fruits, flowers and vegetables under the project scheme Article 275 (1) of the constitution of India	To cater the requirement of quality planting material within the district and neighboring areas which will include the procurement of seedlings, seeds for multiplication, construction of polyhouses for raising of seedlings, construction of water harvesting reservoir and construction of pack house	G2G	Deleted	Yes			Deleted by Department
AFW.15	Daily Market Price Information on Agriculture/Horticulture Commodities	To provide the market price of Agriculture/Horticulture Commodities to the farmers, buyers, sellers and citizens on a daily basis. ADOs/HDOs/DEOs would do the entries in the portal on a daily/ weekly basis and on market days.	G2C	Informational	No			
AFW.16	Soil Health Card to Farmers	Soil health card provides the prescription to the farmers on how to use fertilizers for their crops grown in the soil which they have given for soil testing.	G2C	Informational	No	AFW.18	Distribution of Soil Health Card to Farmers	Services related to providing Soil Health Card are merged
AFW.17	Creation of water harvesting structure under PMKSY-PDMC	Construction of Check dams/ponds etc with field canals/ piping network for conveyance of water	G2G	Financial Assistance	No			
AFW.18	Survey of land through Soil Survey Organization Scheme	Providing suitable land use recommendation of irrigation project, mapping of different soil types, generating data on the fertility status of soil etc.	G2C	Informational	Yes	AFW.16		

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
AFW.19	Assistance for Creation of Water sources under MIDH	Water sources are created in the form of check dams to store water for farmers field cultivation or orchards on the farm for use all year round	G2C	Financial Assistance	Yes	AFW.02		
AFW.20	Testing of seed samples collected from the farmers	Testing of seed for moisture content, germination %, purity	G2C	Informational	No			
AFW.21	Providing inputs for Reclamation of Problem (Acid) Soil under RKVY Sub-Scheme	The Scheme aims at increasing crop production through Reclamation of acidic/ problem soils	G2C	Inputs Distribution	No	AFW.53, 54, 58, 61, 70, 73, 76, 77	Providing Inputs to Farmers	Services related to distribution of Inputs under different schemes are merged.
AFW.22	Training to conduct crop cutting experiment (CCE)	To train the officers ( DAO/DHO/ADO/HDO/ATMA) on how to carry out (CCE)	G2G	Training	No	AFW.26, 80	Training to Officials	Official Trainings are merged.
AFW.23	Transfer of Funds to Allied Departments under RKVY	Fund received from GOI is transferred to Allied sectors i.e. Horticulture, AH & Vetty, Soil and Water conservation, Fisheries and Co-operative Societies for Infrastructure Development, Production and Growth in Agriculture projects under RKVY.	G2G	Financial Assistance	No			
AFW.24	Crop Insurance under PMFBY	Providing subsidy on the premium of crop insurance paid by farmers	G2C	Financial Assistance	No		Crop Insurance to Farmers	
AFW.25	Providing infrastructure under Rashtriya Krishi Vikas Yojana	Strengthening of Phodkylla Horticulture Farm / Construction of Godown/ Construction of Training Hall under South West Khasi Hills District, Mawkyrwat	G2G	Deleted	Yes			Deleted by Department
AFW.26	Sale of Tree saplings under Sub Mission on Agro-Forestry .	Raising of Forest/Fruit saplings in Public & Private nurseries and sale at subsidized rate.	G2C	Product Selling	Yes	AFW.11		
AFW.27	Spices Development Scheme	Procurement of Machineries and equipment	G2G	Deleted	Yes			Deleted by Department

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
AFW.28	Training and awareness campaign under PMFBY	Conducting training and awareness programme for farmers organized by Directorate of Agriculture in co-ordination with concerned implementing Insurance Company.	G2C	Training	Yes	AFW.01		
AFW.29	Assistance for production of planting materials in nurseries , existing coconut plants and compost making	Production & disbursement of quality coconut seedlings to farmers and assistance for existing coconut plants and compost making.	G2C	Financial Assistance	No	AFW.30 , 81	Financial Assistance for Production Activities	Services related to financial assistance for production of special category crops are merged
AFW.30	Assistance for planting of sweet potato, colocasia under Tuber Crop development scheme.	Farmers are provided assistance either in kind/cash to improve/promote cultivation of sweet potato/colocasia/tapioca.	G2C	Financial Assistance	Yes	AFW.29		
AFW.31	Sale of flower seeds and seedlings at Govt. farm under Floriculture development scheme	Raising of flowers seeds and seedling for sale to public and for using in the farm	G2G	Product Selling	Yes	AFW.11		
AFW.32	Disbursement of planting materials in convergence with C&RD dept. under fruit development scheme	Distribution and planting of fruit saplings of farmers selected for convergence with MNREGA	G2C	Inputs Distribution	Yes	AFW.06		
AFW.33	Assistance for planting of sweet potato, colocasia under Tuber Crop development scheme.	Farmers are provided assistance either in kind/cash to improve/promote cultivation of sweet potato/colocasia/tapioca.	G2C	Deleted	Yes			Deleted by Department
AFW.34	Training services under BATC Scheme.	Imparting training to educated rural unemployed youths for self-employment on farm based activities.	G2C	Training	Yes	AFW.01		
AFW.35	Release of promising varieties/lines of different crops under Agri Research Station and Labs Scheme.	Field experimental trails on different crops in various locations for studying the adaptability, Suitability and performance of different	G2C	Informational	No			

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
		varieties under different conditions.						
AFW.36	Training under Agriculture Census Scheme	Training on collection of crop census data	G2E	Training	Yes	AFW.22		
AFW.37	Distribution of Wire Mesh and Polythene Sheets for Preparation of 18 Days Organic compost under Organic Manure Scheme	Production of organic manure for the farmer's use and to create an income generating activity	G2C	Inputs Distribution	No	AFW.47 , 71, 97	Distribution of Machineries and Equipments	All services related to Machinery and Equipments distribution are merged.
AFW.38	Training on cultivation of mushroom & compost making	The center provides training on cultivation of oyster & button mushroom and compost making for button mushroom through classroom training and demonstration in actual laboratory condition and farmers field.	G2C	Training	Yes	AFW.01		
AFW.39	Disbursement of seeds under NFSM	Approval of funds, procurement and disbursement of seeds under National Food Security Mission	G2C	Inputs Distribution	Yes	AFW.06		Merged with AFW.06
AFW.40	Assistance for Establishment of small nurseries for fruit plants under MIDH	Assistance provided for setting up of small nurseries in 1 Ha. area both in Public and private Sector for production of 25,000 plants per hectare of mandated perennial vegetatively propagated fruit plants/Spices/plantation crops/aromatic duly certified for its quality. Nurseries will be encouraged for accreditation and avail assistance for up-gradation of nurseries to meet the accreditation norms.	G2C	Financial Assistance	Yes	AFW.02		Duplicate
AFW.41	Sale of processed products	Utilization of surplus fruits and vegetables and conversion of	G2C	Product Selling	No	AFW.94	Sale of Products	Services related to sale of

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
		the same into marketable processed products. The processed food products which ranges from squashes, jams, jellies, RTS, drinks, marmalades, canned fruits, etc. are marketed under the brand name MEG. Consumers can buy Meg products at the MEG Retail outlet and the Fruit Preservation Centre Shillong and Dainadubi.						products are merged
AFW.42	Training Services under Organic Manure Scheme.	Creating awareness and imparting motivational training programme on the importance of organic farming and production of ready on-farm manure through 18 days composting	G2C	Training	Yes	AFW.01		
AFW.43	Information Services under Agri/Hort Information Scheme	Disseminating information on scientific methods of cultivation to extension staff and farming community through media such as pamphlets, leaflets, radio, television etc and participating/holding awareness programmes by means of exhibition, seminar etc.	G2C	Informational	No			
AFW.44	Cluster Demonstration and Training Through NFSM	Approval of funds, dissemination and training of technology under National Food Security Mission	G2C	Training	Yes	AFW.01		
AFW.45	Training of farmers under SMSP Scheme	Imparting training and awareness program on new technologies for increasing production & productivity of quality seeds.	G2C	Training	Yes	AFW.01		
AFW.46	Income support to farmers through Pradhan Mantri Kisan	Financial assistance to land holding farmers @ Rs 6000 in 3 Instalments	G2C	Financial Assistance	No			

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
	Samman Nidhi (PMKISAN)							
AFW.47	Supplies of Machineries and Equipment under NFSM	Approval of fund, procurement and supplies of Machineries such as Conoweeder, Manual Sprayer, pipes etc to Farmers	G2C	Inputs Distribution	Yes	AFW.37		
AFW.48	Distribution of vegetable seeds under Vegetable Development Scheme	Procurement and distribution of vegetable seeds	G2C	Inputs Distribution	Yes	AFW.06		Merged with AFW.06
AFW.49	Processing of fruits	Utilization of surplus fruits and vegetables and conversion of the same into marketable processed products.	G2G	Deleted	Yes			Deleted by Department
AFW.50	Providing training under Soil Health Management	Training programme on balance use of organic fertilizer	G2G	Training	Yes	AFW.01		
AFW.51	Transfer of funds under National Bamboo Mission	Fund received from GOI under National Bamboo Mission is transferred to Soil and water conservation Department for implementation of services under the project.	G2G	Financial Assistance	No			
AFW.52	Training services under Ramie Development Scheme	Training on Pre harvest and post-harvest technologies for development of Ramie crop.	G2C	Training	Yes	AFW.01		
AFW.53	Supply of inputs (Planting Materials, FYM, bio pesticides and decortication Machine) under Ramie Development Scheme	Procurement of Planting Materials, FYM, bio pesticides and decortication machine.	G2C	Inputs Distribution	Yes	AFW.21		
AFW.54	Distribution of bio pesticide and bio agent under plant protection scheme	Procurement of Bio pesticide and bio agent and distribution to the farmers	G2C	Inputs Distribution	Yes	AFW.21		
AFW.55	Sale of spawn and compost under the Scheme Regional Centre for training and	Production and disbursement of spawn (oyster & button mushroom) and compost for button mushroom	G2C	Product Selling	Yes	AFW.11		

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
	production of Mushroom							
AFW.56	Training of farmers under Farmers' Institute Scheme.	Educating and creating awareness to farmers on modern technologies, organic and improved methods of cultivation etc through training and demonstration.	G2C	Training	Yes	AFW.01		
AFW.57	Providing Stipend, Book grant, Prorata Contribution etc under Agri Studies Scheme	Sponsoring students for undergoing 4 yrs BSc Agri/Hort course against State quota.	G2C	Financial Assistance	No	AFW.69	Providing Scholarship and Stipend to Students and Unemployed	Scholarship services are merged together.
AFW.58	Providing Agri, Horti and Agro- Forestry inputs (planting materials) under National Mission for Sustainable Agri (RAD)Scheme.	Promotion of Integrated Farming System through National Mission for Sustainable Agri (RAD).	G2C	Inputs Distribution	Yes	AFW.21		
AFW.59	Training of farmers under NMSA (RAD)	Imparting taring and awareness programme to the farmer for sustainable agriculture on a cluster approach.	G2C	Training	Yes	AFW.01		
AFW.60	Sale of Seeds and Seedlings in Govt. run farm under vegetable development scheme	Raising of vegetable seeds and seedlings for sale to the public	G2G	Product Selling	Yes	AFW.11		
AFW.61	Distribution of Agriculture inputs under State Rice Mission	Procurement and distribution of high yielding, hybrid and local improved varieties of paddy seeds, Bio Pesticides and Bio Fertilizers to farmers.	G2C	Inputs Distribution	Yes	AFW.21		
AFW.62	Assistance for Beekeeping under MIDH	Honey bee colony, hives and equipments are provided to farmers for their orchards for better pollination of fruit trees in order to get better production and also to	G2C	Financial Assistance	Yes	AFW.07		

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		supplement their income by selling honey.						
AFW.63	Providing livestock such as Cross breed Cows, pigs, chicks under NMSA (RAD) Scheme.	Promotion of Integrated Farming System (IFS) on a cluster approach through NMSA (RAD) Scheme.	G2C	Financial Assistance	No		Providing Financial Assistance for Integrated farming to the farmer	
AFW.64	Assistance for Infrastructure development for providing Rope ways under RKVY	Assisting farmers to transport the agriculture produce from the low lying areas to the upland through rope ways thereby improving their economic condition.	G2C	Financial Assistance	Yes	AFW.02		
AFW.65	Assistance to farmers for trellis on biskot/ other creeper vegetables under vegetable Development Scheme.	Trellis making for biskot and other creeper vegetables	G2C	Financial Assistance	Yes	AFW.02		
AFW.66	Providing infrastructure for Integrated post-harvest management (Functional pack house under MIDH)	Building infrastructure for progressive farmers to store their harvested products and later they can market them on time so that storage facilities are available to them.	G2C	Financial Assistance	Yes	AFW.02		
AFW.67	Providing Machinery and Equipment under Soil Health Management Scheme	Procurement of Machinery and Equipment for setting up of static Soil Testing Lab, strengthening of existing Soil Testing Labs and setting up of Bio Control Labs	G2G	Financial Assistance	Yes			Internal process for setting up Soil Testing and Bio Control Labs.
AFW.68	Farmers' Training under State Rice Mission.	Training of Farmers on Berkeley Composting Methods.	G2C	Training	Yes	AFW.01		
AFW.69	Providing Scholarship and stipend through BATC Scheme	a) providing stipend cum lodging allowance to Educated unemployed youths of the State who participate in the 3 months training on Farm based activities. b) providing assistance as seed money on	G2C	Financial Assistance	Yes	AFW.57		

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
		completion of the programme c) Educated unemployed youths of the State who own land are eligible to apply for this service.						
AFW.70	Disbursement of bio pesticides and bio agents under Plant Protection Scheme	Procurement and distribution of Bio pesticides and bio agents .	G2C	Inputs Distribution	Yes	AFW.21		
AFW.71	Providing Machinery through RKVY	The scheme will help increasing the productivity and production of the agriculture by achieving timeliness in farm operations	G2B	Inputs Distribution	Yes	AFW.37		
AFW.72	Sale of vegetable seeds and seedlings	Raising and sale of vegetable seeds and seedlings at Govt. farm	G2C	Deleted	Yes			Deleted by Department
AFW.73	Assistance for Value Chain Production under Mission Organic Value Chain Development for North East Region	The vendor(Service provider) procures the off farm inputs & planting materials and disburse the same to the clusters for development of Organic Production Clusters.	G2C	Inputs Distribution	Yes	AFW.21		
AFW.74	Community canning	Any individual who has surplus raw materials (fruits) from their orchards/farms can bring them for processing into their desired final product.	G2C	Supply Chain	No			
AFW.75	Assistance for Value chain Processing Under Mission Organic Value Chain Development for North East Region.	Financial assistance for setting up of Integrated Processing unit.	G2C	Financial Assistance	Yes	AFW.02		
AFW.76	Distribution of Bio-pesticides and Bio agents for Demonstration under Plant Protection Scheme	Procurement and distribution of Bio-pesticides and Bio agents to the beneficiaries for demonstration	G2C	Inputs Distribution	Yes	AFW.21		

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
AFW.77	Assistance for rejuvenation of Citrus orchard under MIDH	Distribution of inputs for rejuvenation of Khasi mandarin	G2C	Inputs Distribution	Yes	AFW.21		
AFW.78	Wages to Muster Rolls (Skilled, Un-skilled and semi-skilled)	The wages disbursed to the employees in the Fruit preservation center	G2E	Deleted	Yes			Deleted by Department
AFW.79	Distribution of Potato quality seeds under Tuber Crop development scheme	Procurement and distribution of quality potato seeds to potato growers.	G2C	Inputs Distribution	Yes	AFW.06		Merged with AFW.06
AFW.80	Training to AWS(Automatic Weather Station) Operators under Agriculture Economics and Statistics.	Imparting hands on training for operation & maintenance of AWS.	G2E	Training	Yes	AFW.22		
AFW.81	Assistance for Kiwi/grapes/passion fruit plantation under fruit development scheme	Purchase of planting materials and trellis with angle T bar iron post.	G2C	Financial Assistance	Yes	AFW.29		
AFW.82	Assistance for Protected cultivation under vegetable development scheme	Construction of green house in farmers field	G2C	Financial Assistance	Yes	AFW.02		
AFW.83	Assistance for Setting up of pineapple stockyard and mini processing unit under the project scheme article 275(1) of the constitution of India	Pineapple stockyard will be established at Mawphrew village thereby helping the farmers in assimilating their produce for easier transporting, marketing and also to create a pineapple stock pile to be utilized as raw material in mini processing unit. The mini processing unit will serve as food processing and value addition with the core objective of providing sustainable livelihood to the pineapple growers of Mawphrew village ribhoi district	G2G	Financial Assistance	No			

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
AFW.84	Disbursement of saplings under Fruit development scheme	Procurement and disbursement of fruit saplings(temperate, sub-tropical & tropical) for fruit plantation	G2C	Inputs Distribution	Yes	AFW.06		
AFW.85	Sale of Planting material (Ginger Rhizome).	Production and sale of Ginger rhizome.	G2C	Product Selling	Yes	AFW.11		
AFW.86	Assistance for cultivation of flowers in protected cultivation under Floriculture development scheme	Construction of polyhouse at farmers field for planting of commercial flowers through the service provider approved by the dept.	G2C	Financial Assistance	Yes	AFW.02		
AFW.87	Training to farmers under Agricultural Marketing Scheme	Imparting training to farmers on post harvesting technology etc of horticulture products	G2C	Deleted	Yes			Deleted by Department
AFW.88	Training to farmers under Agricultural Marketing Scheme	Imparting training to farmers on post harvesting technology etc and marketing of horticulture products	G2C	Training	Yes	AFW.01		
AFW.89	Assistance for purchase of Plant Protection equipment under Plant protection scheme	Procurement and disbursement of Plant Protection equipments.	G2C	Financial Assistance	Yes	AFW.07		
AFW.90	Assistance for Value Chain Production under Mission Organic Value Chain Development for North East Region	Support for extension services, input facilitation, training handholding and certification @10000/hac	G2C	Training	Yes	AFW.01		
AFW.91	1917 iTEAMS Agro Advisory, Market Connect and Transport Logistics	Providing farmers with timely and accurate information for proper decision making. Farmers can call the toll free number of 1917 for any queries related to Agriculture, Horticulture, Fisheries, Animal Husbandry, Apiculture and Sericulture; Providing information about potential markets and sellers and	G2C	Informational	No			

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
		making farmers and buyers aware of the different selling / buying options available to them. 1917iTEAMS connects the registered Farmers having commodities to sell to the registered Buyers; Providing evacuation and transportation logistics solutions to the farmers and buyers who wish to transport their goods to any farms or markets of their choice through a network of pickup trucks which are known as Agri-Response Vehicles (ARVs) at a highly competitive rate of Rs. 0.02 per kg / km.						
AFW.92	ICT Services under National e-Governance Scheme for Agriculture (NeGP-A)	Improved Access of farmers to timely and relevant information during crop cycle	G2C	Informational	Yes			Not a Service
AFW.93	Assistance for purchase of post-harvest management tools and implements under Agricultural Marketing Scheme	Sale of post-harvest management tools and implements to farmers and entrepreneur.	G2C	Financial Assistance	Yes	AFW.07		
AFW.94	Sale of Meg products and other Produce of Meghalaya through Meg Sale Outlet	Procuring and selling of Meg products, Meg Tea, Cashewnuts and other products of the State.	G2C	Product Selling	Yes	AFW.41		
AFW.95	Farmers' Training Programme through State Bio-control Lab	Promotion of bio-agents such as Trichoderma, Beauveria, Melanconium, Trichogramma etc as control measures against pest+disease in plants	G2C	Training	Yes	AFW.01		
AFW.96	Exposure trip for award winning/progressive farmers under Farmers Institute scheme	Award winning/ progressive farmers are taken for exposure visits/study tour to Agriculture Research Stations, Agriculture Universities, farm etc.	G2C	Training	No			

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
AFW.97	Providing Agricultural Machineries and Equipments on hire through Departmental Custom Hiring Centers under Agriculture Engineering (Mechanical/Workshop ) Scheme	Procurement/ Operation/ Maintenance of Agricultural Machineries and Equipments on hire 1. An Applicant must be a bona-fide farmer. 2. He should have cultivable land at his disposal and registered in his name (in case the applicant does not own land, he is required to produce a certificate from the land owner allowing him to cultivate the concerned plot). 3. The land should not be less than 5 Acres so as to justify the need of a Power Tiller under the Scheme.	G2C	Inputs Distribution	Yes	AFW.37		
AFW.98	Distribution of Plant Protection equipment at 50% subsidy under Plant Protection Scheme	Procurement of Plant Protection equipments distribution of the same at 50% subsidy	G2C	Deleted	Yes			Deleted by Department
AFW.99	Training on value addition of fruits and vegetables	To disseminate technical information on food processing to the entrepreneurs/farmers/ interns/students/SHG/FPO. Interested citizens can avail this service.	G2C	Training	Yes	AFW.01		
AFW.100	Exhibition/ Festivals/ Shows (Mela)	Exhibitions of Horticulture produce/products by farmers/ Entrepreneurs	G2B	Training	No			
AFW.101	North East Food Show	The North-East Food Show is an opportunity for entrepreneurs of the North-East to meet and interact with National & Global majors of the Food & Beverage Industry to better understand, build connections, anticipate consumer needs and familiarize themselves with the latest trends in the	G2B	Supply Chain	No		Application for Stall in North East Food Show	

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
		industry for export promotion and up-scaling their businesses to global standards. The entrepreneurs/firms/companies who wish to participate in the B2B platform can fill in the application form either through online or offline mode with the due payment as stall charges. Any National or International firm/enterprise/company can avail this service.						
AHS.01	Distribution of Piglets	The department has 13 pig farms for producing improved breeds like introduced Hampshire, Saddle Back and other Cross Breed Pigs for supplying piglets inputs for supplying to the farmers to generate employment and for upgradation of local indigenous stock so that production level is enhanced. Also, to improve the economic livelihood of the rural poor and landless labours.	G2C	Inputs Distribution	No		Distribution and Management of Livestock	
AHS.02	Treatment of ailing Animals and Birds	A network of Veterinary Hospitals and Dispensaries manned by qualified Veterinarian have been established in the State for undertaking treatment of ailing animals and birds. At present the Department has a network of 4 Hospitals and 114 Veterinary Dispensaries besides 15 Mobile Dispensaries and 7 Vigilance Unit for Animal Health Care.	G2C	Treatment	No			
AHS.03	Artificial insemination for Cattle Breeding	For all round development of Cattle wealth in the different	G2C	Inputs Distribution	No			

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
		parts of the State, various development programmes such as Cattle Breeding Farms for producing inputs for distribution are established. Four Cattle breeding farms e.g. Indo Danish Project, Upper Shillong, (East Khasi Hills); Regional Cross Bred Cattle Breeding Farm, Kyrdemkulai (Ri Bhoi district); Cattle Farm, Khliehtyrshi, (Jaintia Hills district) and Livestock Farm, Rongkhon (West Garo Hills) have been established to produce improved breeding stock for development of cattle in the State to boost up production of milk						
AHS.04	Intensive Cattle Development Projects	The Intensive Cattle Development Project, one at Upper Shillong and the other at Tura, have been established in the State to take up an integrated approach in development of cattle breeding, fodder development etc. The objective of the project is to upgrade the local cows through introduction of better germplasm of the exotic Fresian and Jersey breeds and to induct the local tribal breeders to adopt modern scientific techniques in Animal Husbandry.	G2C	Inputs Distribution	Yes	AHS.03		As suggested by department, this is same service as AHS.03
AHS.05	Care and management of piglets	The eligible beneficiaries for pig farming are trained for proper scientific care and management from the stage of piglets to adulthood (either	G2C	Training	Yes	AHS.06		

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
		for breeding or fattening purpose).						
AHS.06	Training of farmers in poultry and dairy farming	The object of the scheme is to impart training to farmers, beneficiaries on improved livestock and poultry farming, proper management, feeding and health care of livestock and poultry. The Department has established 6 Vocational training Centers to conduct training to farmers.	G2C	Training	No	AHS.05	Training of AHVT farmers	Impart training to AHVT farmers, beneficiaries on improved livestock and poultry farming, proper management, feeding, health care and scientific care of piglets, livestock and poultry etc.
AHS.07	Providing Demonstration & training to internal staff	The Cattle Breeding Farms also serve as the visual demonstration units in scientific method of rearing, feeding and management of cattle which includes fodder cultivation.	G2E	Training	No			
AHS.08	Poultry Development Programme	The Poultry Development Programme of the State has, therefore, been directed towards increasing productivity of the poultry of the State by introducing improved breeds. The Department has set up Poultry Farms. The objective of these farms is to serve the purpose of experimentation, demonstration and production of eggs beside the main purpose for rearing chicks for distribution amongst the poultry rearers.	G2C	Product Selling	No			
AHS.09	Grant in Aid and Subsidies Livestock farmers	For peoples participation in production, incentives in the form of Grant in Aid and Subsidies are provided so that	G2C	Deleted	Yes			As per the feedback from AHVT, this has

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
		production status is enhanced to meet the state demands						been rationalized.
AHS.10	Preventive measures through vaccination	The Veterinary hospitals and dispensaries are taking preventive measures through vaccination for controlling specific diseases.	G2C	Treatment	No			
AHS.11	Application for Casual Leave	Officers and cadres can apply for casual leave to the respective senior DDOs	G2E	Not a Service	Yes			Common Service
FIS.01	Financial and Technical Assistance for Establishment of fish Hatcheries	Any individual of the state except(Central/State Govt. Employee), with a water area of at least 0.1 Ha	G2B	Financial Assistance	No	FIS.02, 03, 04, 05, 06, 07, 08, 09, 10, 11	Technical and Financial Assistance for Establishment of Fisheries Infrastructure	All services for financial and technical assistance for establishment of fisheries infrastructure are merged together.
FIS.02	Financial and Technical Assistance for Construction of Individual Fish Ponds	Fish pond construction . -Any citizen of Meghalaya state can apply for it -Govt. Employees ( both state and center) can't apply for it. -Landholding should be min. 0.1 Hac & max 1 Hac	G2B	Financial Assistance	Yes	FIS.01		
FIS.03	Financial Assistance for Establishment of Fish Sanctuary	Community based organization which focuses on conversational of indigenous species with strict regulation on ban on any fishing practices in rivers/stream/etc.,	G2B	Financial Assistance	Yes	FIS.01		
FIS.04	Financial Establishment of Aqua-park	Community based organization which focuses on conversational of indigenous species with strict regulation on ban on any fishing practices in rivers/stream/etc, Water area of 1 Hectare	G2C	Financial Assistance	Yes	FIS.01		
FIS.05	Financial Assistance for Mobile Fish Retail Units	Any individual of the state except(state/govt. employee) ,	G2B	Financial Assistance	Yes	FIS.01		

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
		with a land holding of at least 500 Sq. Ft.						
FIS.06	Financial and Technical Assistance for establishment of Fish Feed Mills	Any individual of the State except(State/Central Govt. Employee), with land area of at least 0.1 Ha.	G2B	Financial Assistance	Yes	FIS.01		
FIS.07	Financial and Technical Assistance for the Construction of Community Ponds	Community based organization which focuses on culture and rearing of fish species with a water area of at least 0.5 Hectare	G2B	Financial Assistance	Yes	FIS.01		
FIS.08	Financial Assistance for Paddy cum fish Culture	Any individual of the state except(Central/State Govt. Employee), with a water area of at least 0.1 Ha	G2B	Financial Assistance	Yes	FIS.01		
FIS.09	Financial Assistance for Renovation of Individual and Community Ponds	Damage pond, already assisted/not assisted	G2B	Financial Assistance	Yes	FIS.01		
FIS.10	Financial and Technical Assistance for Establishment of Fiberglass Reinforced Plastic Hatcheries	Any individual of the State except(State/Central Govt. Employee) with a land area of at least 0.1 Ha	G2B	Financial Assistance	Yes	FIS.01		
FIS.11	Financial Assistance for construction of Modern Hygienic Fish Markets & Retail Kiosks	Cooperative Societies, with a land area of at least 0.1 Ha.	G2B	Financial Assistance	Yes	FIS.01		
FIS.12	Input Distribution	Any Citizen/Beneficiaries who has an existing pond or a newly constructed project can avail this services.	G2C	Inputs Distribution	No			
FIS.13	Product Selling	Any Individual/Society/SHG can avail this service beside having a good connection with the beneficiaries for the supply of Fish for selling in the retail outlet.	G2C	Product Selling	No			
FIS.14	Training	Any Citizen who already have a fish pond and has interest in Fish Farming can avail this	G2C	Training	No			

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
		service. Beneficiaries who are assisted under the scheme will have to undergo training at MSFRTI institute.						
FIS.15	Supply Chain	Any Individual/Society/SHG can avail the schemes.	G2B	Supply Chain	No			
TEX.01	Assistants for construction of mounting hall	Construction of mounting for spinning of cocoons at the farmers. Sericulture Farmers having plantation and rearing activities.	G2C	Financial Assistance	Yes	TEX.05		
TEX.02	Support for fencing of mulberry plantation	Fencing of plantation. Sericulture farmers having Mulberry plantation.	G2C	Financial Assistance	Yes	TEX.05		
TEX.03	Engagement of Textiles Designers	Textile Designers. Degree from NIFT/NID/Textiles from recognized Institution/Diploma in IIHT.	G2C	Entrepreneurship	Yes			Covered in Entrepreneurship Pillar
TEX.04	Plantation of Mulberry, Eri and Muga	Plantation Development Sericulture Farmers having plot of land	G2C	Financial Assistance	No			
TEX.05	Assistant for construction of Grainages	Construction of Grainage for production of Dfls. Sericulture farmers having plot of land.	G2C	Financial Assistance	No	TEX.01, 02, 07, 09, 11, 12	Financial Assistance for Establishment of Sericulture Infrastructure	Services related to Assistance in Infrastructure Development are merged
TEX.06	Supply of rearing appliances	Supplies of rearing appliances to Sericulture farmers. Sericulture farmers having plantation.	G2C	Inputs Distribution	No			
TEX.07	Assistant for construction of workshed	Construction of workshed for weavers. Weavers having loom.	G2C	Financial Assistance	Yes	TEX.05		
TEX.08	Strengthening of Silk Reeling Unit	Marketing Support to Sericulture farmers. Sericulture farmers of Meghalaya.	G2C	Product Selling	No			
TEX.09	Support for Vermi Compost shed	Construction of Vermi Compost shed. Sericulture farmers having plantation.	G2C	Financial Assistance	Yes	TEX.05		

Service Code	Service Name	Service Description	Service Classification	Domain	Rationalized	Merged with Service No	Modified Service Name	Rationalization Remarks
TEX.10	Sale of Yarn through Mini Yarn Bank	Sale of Yarn to the Private Weavers at Millgate Price for Private Weavers having own Looms	G2C	Product Selling	No			
TEX.11	Assistant for construction of rearing houses	Construction of rearing houses for silkworm rearing. Sericulture farmers having plantation.	G2C	Financial Assistance	Yes	TEX.05		
TEX.12	Support for Kissan Nursery	Establishment of Nurseries for production of saplings, seedlings. Sericulture farmers having plot of land.	G2C	Financial Assistance	Yes	TEX.05		
TEX.13	Distribution of Chowki worms and Silkworm eggs	Distribution of chowki reared worms and silkworm eggs to the sericulture farmers . Sericulture Farmers	G2C	Inputs Distribution	No			
TEX.14	Establishment of Handloom Weaving Training Centre	Imparting Training on handloom. Unemployed youth of the State	G2C	Training	No			
TEX.15	Supply of Yarn to the Weavers	Distribution of yarns free of cost to Private Weaver Eligibility: Weavers of the state of Meghalaya having his/her own Looms .	G2C	Inputs Distribution	No			

## 9.4 Service Indicator Mapping

SI No	Indicator	Service Code	Service Name
1	Farmers with surplus production to sell in the open market	AFW.06	Distribution of Seeds to Farmers
		AFW.16	Distribution of Soil Health Card to Farmers
		AFW.20	Testing of seed samples collected from the farmers
		AFW.21	Providing Inputs to Farmers
		AFW.01	Provide Training and Awareness to Farmers
		AFW.02	Financial Assistance for Establishment of Agriculture Infrastructure
		AFW.37	Distribution of Machineries and Equipments
		AFW.91	1917 iTEAMS Agro Advisory, Market Connect and Transport Logistics
		FIS.15	Supply Chain
2	Distribution of soil health cards to 100% farmers by 2019	AFW.16	Distribution of Soil Health Card to Farmers
3	Rice, wheat and coarse cereals produced annually per unit area ( kg/Ha)	AFW.21	Providing Inputs to Farmers
		AFW.01	Provide Training and Awareness to Farmers
4	Percentage growth in average income of small-scale food producers, by sex and indigenous status	AFW.43	Information Services under Agri/Hort Information Scheme
		AFW.06	Distribution of Seeds to Farmers
		AFW.07	Financial Assistance for Purchase of Machinery
		AFW.11	Sale of Planting Materials
		AFW.01	Provide Training and Awareness to Farmers
		AFW.02	Financial Assistance for Establishment of Agriculture Infrastructure
		AFW.06	Distribution of Seeds to Farmers
		AFW.37	Distribution of Machineries and Equipments
		AFW.21	Providing Inputs to Farmers
		AFW.41	Sale of Processed Products through Meg Sale Outlet
		AHS.10	Preventive measures through vaccination
5	Increase net cropping intensity (Cropping intensity refers to raising of a number of crops from the same field during one agricultural year; it can be expressed through a formula. $\text{Cropping Intensity} = \frac{\text{Gross Cropped Area}}{\text{Net Sown Area}} \times 100$ )	AFW.07	Financial Assistance for Purchase of Machinery
		AFW.37	Distribution of Machineries and Equipments
		AFW.21	Providing Inputs to Farmers
6	Percentage of indigenous species under conservation	AHS.02	Treatment of ailing Animals and Birds
		AFW.35	Release of promising varieties/lines of different crops under Agri Research Station and Labs Scheme.

SI No	Indicator	Service Code	Service Name
7	Increase in Agriculture orientation index	AFW.06	Distribution of Seeds to Farmers
		AFW.13	Distribution of Organic Manure
		AFW.21	Providing Inputs to Farmers
		AFW.37	Distribution of Machineries and Equipments
8	Growth (percentage) in gross Agriculture expenditure Y-o-Y	AFW.01	Provide Training and Awareness to Farmers
		AFW.02	Financial Assistance for Establishment of Agriculture Infrastructure
		AFW.07	Financial Assistance for Purchase of Machinery
		AFW.17	Creation of water harvesting structure under PMKSY-PDMC
		AFW.21	Providing Inputs to Farmers
		AFW.24	Crop Insurance under PMFBY
		AFW.29	Financial Assistance for Production Activities
		AFW.46	Income support to farmers through Pradhan Mantri Kisan Samman Nidhi (PMKISAN)
		AFW.51	Transfer of funds under National Bamboo Mission
		AFW.57	Providing Scholarship and Stipend to Students and Unemployed
9	Percentage of growth of export subsidy to agriculture exports	AFW.63	Providing Financial Assistance for Integrated farming to the farmer
		AFW.83	Assistance for Setting up of pineapple stockyard and mini processing unit under the project scheme article 275(1) of the constitution of India
10	Gross Global Food Loss Index (GFLI) in metric tones	AFW.02	Financial Assistance for Establishment of Agriculture Infrastructure
		AFW.29	Financial Assistance for Production Activities
		AFW.91	1917 iTEAMS Agro Advisory, Market Connect and Transport Logistics
		AFW.02	Financial Assistance for Establishment of Agriculture Infrastructure
11	Ratio of chemical fertilizers sold to ratio of crop production	AFW.74	Community canning
		AFW.05	Providing infrastructure for seed production by farmers' producer groups.
		AFW.16	Distribution of Soil Health Card to Farmers
		AFW.01	Provide Training and Awareness to Farmers
12	Percentage increase in total production of fodder in the state	AFW.13	Distribution of Organic Manure
		AFW.37	Distribution of Machineries and Equipments
13	Per-capita milk yield per milk animal.	AFW.21	Providing Inputs to Farmers
		AFW.22	Training to Officials
		AHS.07	Providing Demonstration & training to internal staff
14	Per capita meat production.	AHS.03	Artificial insemination for Cattle Breeding
		AHS.06	Training of AHVT farmers
		AHS.10	Preventive measures through vaccination
		AHS.01	Distribution and Management of Livestock
14	Per capita meat production.	AHS.03	Artificial insemination for Cattle Breeding
		AHS.06	Training of AHVT farmers
		AHS.08	Poultry Development Programme

SI No	Indicator	Service Code	Service Name
		AHS.10	Preventive measures through vaccination
15	Per capita egg production.	AHS.06	Training of AHVT farmers
		AHS.08	Poultry Development Programme
		AHS.10	Preventive measures through vaccination
16	Ratio of Maximum Sustainable Yield (MSY) in fishing to current yield	FIS.01	Technical and Financial Assistance for Establishment of Fisheries Infrastructure
		FIS.12	Distribution of Fish Seeds/ Feed to Fisheries Farmers
		FIS.14	Training to fisheries farmers on fishing activities
17	Percentage increase in fish seed production	FIS.01	Technical and Financial Assistance for Establishment of Fisheries Infrastructure
		FIS.12	Distribution of Fish Seeds/ Feed to Fisheries Farmers
		FIS.14	Training to fisheries farmers on fishing activities
18	Proportion of local breeds classified as being at risk, not-at-risk or at unknown level of risk of extinction	AHS.02	Treatment of ailing Animals and Birds
		AHS.10	Preventive measures through vaccination
19	Annual growth rate in agriculture sector	AFW.02	Financial Assistance for Establishment of Agriculture Infrastructure
20	Farmers with surplus crop production, enabled to be an entrepreneur	AFW.06	Distribution of Seeds to Farmers
		AFW.16	Distribution of Soil Health Card to Farmers
		AFW.20	Testing of seed samples collected from the farmers
		AFW.21	Providing Inputs to Farmers
		AFW.01	Provide Training and Awareness to Farmers
		AFW.02	Financial Assistance for Establishment of Agriculture Infrastructure
		AFW.37	Distribution of Machineries and Equipments
		AFW.91	1917 iTEAMS Agro Advisory, Market Connect and Transport Logistics
		FIS.15	Supply Chain

#### 9.4.1 Department's Targets with Service Mapping

SI. No.	Target	Service Code	Service
1	Development of 1500 Ha individual ponds for Fish Culture by 2023.	FIS.01	Technical and Financial Assistance for Establishment of Fisheries Infrastructure
2	Development of 50 Ha of community ponds for Fish Culture by 2023.	FIS.01	Technical and Financial Assistance for Establishment of Fisheries Infrastructure
3	Adoption of MGNREGS Ponds for Aquaculture and Fisheries Activities.	FIS.01	Technical and Financial Assistance for Establishment of Fisheries Infrastructure
4	Introduction of Paddy cum Fish Culture in 340 Ha in a	FIS.01	Technical and Financial Assistance for Establishment of Fisheries Infrastructure

Sl. No.	Target	Service Code	Service
	cluster-based approach.		
5	Establishment of 10 Nos of Fish Sanctuaries Annually.	FIS.01	Technical and Financial Assistance for Establishment of Fisheries Infrastructure
6	Achieve Fish Seed Production of 15 Million annually through Establishment of additional 17 Nos. of FRP hatcheries annually till 2023.	FIS.01	Technical and Financial Assistance for Establishment of Fisheries Infrastructure
7	Development of 50 Nos of Small-scale fish feed Mills over a period of 5 Years.	FIS.01	Technical and Financial Assistance for Establishment of Fisheries Infrastructure
8	1100 MT of Silk	TEX.08	Purchase of Cocoons by Silk Reeling Unit
9	Increase investment in rural infrastructure, research & extension services, technology development and livestock gene banks in order to enhance livestock & poultry production in the State.	AHS.02 AHS.03 AHS.08	1. Treatment of ailing Animals and Birds 2. Artificial insemination for Cattle Breeding 3. Poultry Development Programme
10	Providing Nutritional Security (1800 Kilocalories)	AFW.13 AFW.20 AFW.21	1. Distribution of Organic Manure 2. Testing of seed samples 3. Providing Inputs to Farmers
11	increasing per capita consumption to 9 kg/per person per year through Fish Production of 27000 MT annually	FIS.01	1. Technical and Financial Assistance for Establishment of Fisheries Infrastructure
12	Introduction of Modern Hygienic Fish Marketing Infrastructures a. 10 Nos. of Modern Hygienic Markets by 2023 b. 10 Nos. each of Special Fish Transportation Units (Insulated Vans, Refrigerated Vans, Oxygenated Vans.	FIS.01	1. Technical and Financial Assistance for Establishment of Fisheries Infrastructure
13	Doubling farmers income by producing 317320 MT Rice by 2020-21	Proposed (AFW.103)	1. Seed Production and Quality Certification
14	Compulsory de-worming of livestock & poultry to 100% by 2030	AHS.10	1. Preventive measures through vaccination
15	Enhance vaccination of livestock & poultry to 100%	AHS.10	1. Preventive measures through vaccination

Sl. No.	Target	Service Code	Service
	by 2030		
16	Regular supply of Raw material to Weavers at Mill gate price, Supply of improve looms Technological Support (58 lakh square meter)	TEX.15	1. Supply of Yarn to the Weavers

## 9.5 Prioritized Services Catalogue

Service Code	Service Name	Service Assessment Value as per DSS (High/ Low/ Medium maturity)	Service Implementation Complexity	Value to Stakeholders	Prioritization Classification (Prioritized/ Blank)
AFW.01	Provide Training and Awareness to Farmers	Low Maturity	Low Complexity	High	Prioritized
AFW.02	Financial Assistance for Establishment of Agriculture Infrastructure	Low Maturity	Low Complexity	High	Prioritized
AFW.05	Providing infrastructure for seed production by farmers' producer groups.	Low Maturity	Complex	Low	Not Prioritized
AFW.06	Distribution of Seeds to Farmers	Low Maturity	Medium to Low Complexity	High	Prioritized
AFW.07	Financial Assistance for Purchase of Machinery	Low Maturity	Low Complexity	High	Prioritized
AFW.11	Sale of Planting Materials	Low Maturity	Low Complexity	Low	Not Prioritized
AFW.13	Distribution of Organic Manure	Low Maturity	Medium to Low Complexity	Low	Not Prioritized
AFW.15	Daily Market Price Information on Agriculture/Horticulture Commodities	Low Maturity	Low Complexity	Low	Prioritized
AFW.16	Distribution of Soil Health Card to Farmers	Medium Maturity	Medium to Low Complexity	Medium	Not Prioritized
AFW.17	Creation of water harvesting structure under PMKSY-PDMC	Low Maturity	High Complexity	Low	Not Prioritized
AFW.20	Testing of seed samples collected from the farmers	Low Maturity	Medium to Low Complexity	Low	Prioritized
AFW.21	Providing Inputs to Farmers	Low Maturity	Medium to Low Complexity	High	Prioritized
AFW.22	Training to Officials	Low Maturity	Low Complexity	Low	Not Prioritized
AFW.23	Transfer of Funds to Allied Departments under RKVY	Medium Maturity	Low Complexity	Low	Not Prioritized
AFW.24	Crop Insurance to Farmers	Low Maturity	Medium Complexity	Low	Not Prioritized
AFW.29	Financial Assistance for Production Activities	Low Maturity	Low Complexity	Medium	Prioritized
AFW.35	Release of promising varieties/lines of different crops under Agri Research Station and Labs Scheme.	Low Maturity	High Complexity	Low	Not Prioritized
AFW.37	Distribution of Machineries and Equipments	Medium Maturity	Medium Complexity	High	Prioritized
AFW.41	Sale of Processed Products through Meg Sale Outlet	Low Maturity		Low	Not Prioritized
AFW.43	Information Services under Agri/Hort Information Scheme	Low Maturity	Low Complexity	Low	Prioritized
AFW.46	Income support to farmers through Pradhan Mantri Kisan Samman Nidhi (PMKISAN)	Low Maturity	Low Complexity	Low	Prioritized
AFW.51	Transfer of funds under National Bamboo Mission	Medium Maturity	Low Complexity	Low	Not Prioritized
AFW.57	Providing Scholarship and Stipend to Students and Unemployed	Low Maturity	Low Complexity	Low	Prioritized
AFW.63	Providing Financial Assistance for Integrated farming to the farmer	Low Maturity	Medium to Low Complexity	Low	Not Prioritized
AFW.74	Community canning	Low Maturity	Low Complexity	Low	Not Prioritized

Service Code	Service Name	Service Assessment Value as per DSS (High/ Low/ Medium maturity)	Service Implementation Complexity	Value to Stakeholders	Prioritization Classification (Prioritized/ Blank)
AFW.83	Assistance for Setting up of pineapple stockyard and mini processing unit under the project scheme article 275(1) of the constitution of India	Low Maturity	High Complexity	Low	Not Prioritized
AFW.91	1917 iTEAMS Agro Advisory, Market Connect and Transport Logistics	Low Maturity	Low Complexity	Medium	Prioritized
AFW.96	Exposure trip for award winning/progressive farmers under Farmers Institute scheme	Low Maturity	Medium Complexity	Low	Not Prioritized
AFW.100	Exhibition/ Festivals/ Shows (Mela)	Low Maturity	High Complexity	Medium	Not Prioritized
AFW.101	Application for Stall in North East Food Show	Low Maturity	Medium Complexity	Low	Not Prioritized
FIS.01	Technical and Financial Assistance for Establishment of Fisheries Infrastructure	Low Maturity	Low Complexity	Medium	Prioritized
FIS.12	Input Distribution	Low Maturity	Medium Complexity	High	Prioritized
FIS.13	Product Selling	Low Maturity	High Complexity	Low	Not Prioritized
FIS.14	Training	Low Maturity	Low Complexity	High	Prioritized
FIS.15	Supply Chain	Low Maturity	High Complexity	Medium	Not Prioritized
AHS.01	Distribution and Management of Livestock	Low Maturity	Medium to Low Complexity	Low	Prioritized
AHS.02	Treatment of ailing Animals and Birds	Low Maturity	Medium to Low Complexity	Low	Not Prioritized
AHS.03	Artificial insemination for Cattle Breeding	Low Maturity	Medium Complexity	Medium	Prioritized
AHS.06	Training of AHVT farmers	Low Maturity	Low Complexity	Medium	Prioritized
AHS.07	Providing Demonstration & training to internal staff	Low Maturity	Low Complexity	Low	Prioritized
AHS.08	Poultry Development Programme	Low Maturity	Low Complexity	Low	Prioritized
AHS.10	Preventive measures through vaccination	Low Maturity	Medium to Low Complexity	High	Not Prioritized
TEX.04	Plantation of Mulberry, Eri and Muga	Low Maturity	Low Complexity	High	Prioritized
TEX.05	Financial Assistance for Establishment of Infrastructure	Low Maturity	Low Complexity	Medium	Prioritized
TEX.06	Supply of rearing appliances	Low Maturity	High Complexity	Medium	Not Prioritized
TEX.08	Purchase of Cocoons by Silk Reeling Unit	Low Maturity	High Complexity	High	Not Prioritized
TEX.10	Sale of Yarn through Mini Yarn Bank	Low Maturity	Medium Complexity	Low	Not Prioritized
TEX.13	Distribution of Chowki worms and Silkworm eggs	Low Maturity	Medium Complexity	Low	Not Prioritized
TEX.14	Establishment of Handloom Weaving Training Centre	Low Maturity	High Complexity	Medium	Not Prioritized
TEX.15	Supply of Yarn to the Weavers	Low Maturity	Medium Complexity	Low	Not Prioritized

## 9.6 Future State Service Catalogue

Service Code	Service Name	Description	Service Type	Service Delivery Location	Service Frequency	Service Delivery Channel	Service Level (Days)
AFW.01	Provide Training and Awareness to Farmers	Assistance to farmers through awareness, orientation and training, distribution of printed package of best practices and demonstrations.	G2C	1. State HQ	Annually	DFC	Service will be delivered in maximum <b>3 months</b>
AFW.02	Financial Assistance for Establishment of Agriculture Infrastructure	Financial Assistance to farmers for creation of pits for composting, irrigation systems, Fruit Gardens, Nurseries, Rearing Houses, Vermi Compost Shed, Workshed etc.	G2C	1. Block Office 2. District HQ	Once in 5 yrs	Online, DFC	Service will be delivered in <b>7 days</b>
AFW.05	Providing infrastructure for seed production by farmers' producer groups.	Construction of seed processing unit- cum- seed storage go down for strengthening and modernizing the infrastructure for seed production, storage, certification and quality control of certified seeds.	G2G	1. District HQ	Once in a lifetime	To be defined in second phase of Implementation	To be defined in second phase of Implementation
AFW.06	Distribution of Seeds to Farmers	Procurement and distributions of seeds and saplings for different crops and fruits	G2C	1. Block Office 2. District HQ	Annually	DFC	Service will be delivered in <b>7 days</b>
AFW.07	Financial Assistance for Purchase of Machinery	Financial Assistance to farmers for purchase of farm equipments and machinery including Honey bee colony, hives, Plant Protection Equipments, Power Tiller, Tractor etc.	G2C	1. State HQ 2. District HQ 3. Block Office	Once in 5 yrs	Online	Service will be delivered in <b>7 days</b>
AFW.11	Sale of Planting Materials	Production, multiplication & disbursement/sale of planting materials like fruit plants, tree saplings, plantation crops, mushroom spawn, flower seeds and seedlings, Ginger rhizome etc.	G2C	1. District HQ 2. Block Office	Annually	To be defined in second phase of Implementation	To be defined in second phase of Implementation
AFW.13	Distribution of Organic Manure	Procurement of Organic Manure and distribution to the	G2C	1. Block Office 2. District HQ	Annually	To be defined in second phase of Implementation	To be defined in second phase

Service Code	Service Name	Description	Service Type	Service Delivery Location	Service Frequency	Service Delivery Channel	Service Level (Days)
		beneficiaries for Demonstration					of Implementation
AFW.15	Daily Market Price Information on Agriculture/Horticulture Commodities	To provide the market price of Agriculture/Horticulture Commodities to the farmers, buyers, sellers and citizens on a daily basis.	G2C	1. Block Office 2. District HQ	Daily	DFC, Online	<b>Real Time</b>
AFW.16	Distribution of Soil Health Card to Farmers	Soil health card provides the prescription to the farmers on how to use fertilizers for their crops grown in the soil which they have given for soil testing.	G2C	1. Block Office 2. District HQ	Once in 2 yrs	To be defined in second phase of Implementation	To be defined in second phase of Implementation
AFW.17	Creation of water harvesting structure under PMKSY-PDMC	Construction of Check dams/ponds etc with field canals/ piping network for conveyance of water	G2G	1. State HQ	Only Once	To be defined in second phase of Implementation	To be defined in second phase of Implementation
AFW.20	Testing of seed samples collected from the farmers	Testing of seed for moisture content, germination %, purity	G2C	1. Block Office 2. District HQ	Annually	DFC, Online	Service will be delivered in <b>30 days</b>
AFW.21	Providing Inputs to Farmers	Provide Inputs to farmers increasing crop production including Bio Pesticides, Bio Agents, Hybrid Seeds	G2C	1. District HQ	Annually	DFC	Service will be delivered in <b>7 days</b>
AFW.22	Training to Officials	To train the officers on various schemes and farming techniques	G2G	1. District HQ 2. State HQ	Annually	To be defined in second phase of Implementation	To be defined in second phase of Implementation
AFW.23	Transfer of Funds to Allied Departments under RKVY	Fund received from GOI is transferred to Allied sectors i.e. Horticulture, AH & Vetty, Soil and Water conservation, Fisheries and Co-operative Societies for Infrastructure Development, Production and Growth in Agriculture projects under RKVY.	G2G	1. State HQ	Annually	To be defined in second phase of Implementation	To be defined in second phase of Implementation
AFW.24	Crop Insurance to Farmers	Providing subsidy on the premium of crop insurance paid by farmers	G2C		Bi-annually	To be defined in second phase of Implementation	To be defined in second phase of Implementation

Service Code	Service Name	Description	Service Type	Service Delivery Location	Service Frequency	Service Delivery Channel	Service Level (Days)
AFW.29	Financial Assistance for Production Activities	Production & disbursement of quality seedlings to farmers and assistance for existing plants, Plantation of Mulberry and compost making for coconut, kiwi fruits, grapes, passion fruit, sweet potato, colocasia, tapioca etc.	G2C	1. Block Office 2. District HQ	Annually	DFC, Online	Service will be delivered in <b>7 days</b>
AFW.35	Release of promising varieties/lines of different crops under Agri Research Station and Labs Scheme.	Field experimental trails on different crops in various locations for studying the adaptability, Suitability and performance of different varieties under different conditions.	G2C		Annually	To be defined in second phase of Implementation	To be defined in second phase of Implementation
AFW.37	Distribution of Machineries and Equipments	Distribution of Wire Mesh, Polythene Sheet, Conoweeder, Manual Sprayer, pipes etc.	G2C	1. District HQ 2. State HQ	Annually	DFC	Service will be delivered in <b>7 days</b>
AFW.41	Sale of Processed Products through Meg Sale Outlet	Utilization of surplus fruits and vegetables and conversion of the same into marketable processed products. The processed food products which ranges from squashes, jams, jellies, RTS, drinks, marmalades, canned fruits, etc. are marketed under the brand name MEG. Consumers can buy Meg products at the MEG Retail outlet and the Fruit Preservation Centre Shillong and Dainadubi.	G2C	1. District HQ	Daily	To be defined in second phase of Implementation	To be defined in second phase of Implementation
AFW.43	Information Services under Agri/Hort Information Scheme	Disseminating information on scientific methods of cultivation to extension staff and farming community through media such as pamphlets, leaflets, radio, television etc and participating/holding awareness programmes by means of exhibition, seminar etc.	G2C	1. District HQ 2. State HQ	Monthly	DFC, Online	<b>Real Time</b>

Service Code	Service Name	Description	Service Type	Service Delivery Location	Service Frequency	Service Delivery Channel	Service Level (Days)
AFW.46	Income support to farmers through Pradhan Mantri Kisan Samman Nidhi (PMKISAN)	Financial assistance to land holding farmers @ Rs 6000 in 3 Installments	G2C	1. Village 2. Block Office 3. District HQ	Annually	DFC, Online	Service will be delivered in <b>3 months</b>
AFW.51	Transfer of funds under National Bamboo Mission	Fund received from GOI under National Bamboo Mission is transferred to Soil and water conservation Department for implementation of services under the project.	G2G		Annually	To be defined in second phase of Implementation	To be defined in second phase of Implementation
AFW.57	Providing Scholarship and Stipend to Students and Unemployed	Sponsoring students for undergoing 4 yrs BSc Agri/Hort course against State quota.	G2C		Annually	DFC, Online	Service will be delivered in <b>7 days</b>
AFW.63	Providing Financial Assistance for Integrated farming to the farmer	Promotion of Integrated Farming System (IFS) on a cluster approach through NMSA (RAD) Scheme.	G2C	1. Village 2. Block Office 3. District HQ	Once in 5 yrs	To be defined in second phase of Implementation	To be defined in second phase of Implementation
AFW.74	Community canning	Any individual who has surplus raw materials (fruits) from their orchards/farms can bring them for processing into their desired final product.	G2C	1. District HQ	Annually	To be defined in second phase of Implementation	To be defined in second phase of Implementation
AFW.83	Assistance for Setting up of pineapple stockyard and mini processing unit under the project scheme article 275(1) of the constitution of India	Pineapple stockyard will be established at Mawphrew village thereby helping the farmers in assimilating their produce for easier transporting, marketing and also to create a pineapple stock pile to be utilized as raw material in mini processing unit. The mini processing unit will serve as food processing and value addition with the core objective of providing sustainable livelihood to the pineapple growers of Mawphrew village ribhoi district	G2G	1. Village 2. Block Office 3. District HQ	Bi-annually	To be defined in second phase of Implementation	To be defined in second phase of Implementation

Service Code	Service Name	Description	Service Type	Service Delivery Location	Service Frequency	Service Delivery Channel	Service Level (Days)
AFW.91	1917 iTEAMS Agro Advisory, Market Connect and Transport Logistics	Providing farmers with timely and accurate information for proper decision making. Farmers can call the toll free number of 1917 for any queries related to Agriculture, Horticulture, Fisheries, Animal Husbandry, Apiculture and Sericulture; Providing information about potential markets and sellers and making farmers and buyers aware of the different selling / buying options available to them. 1917iTEAMS connects the registered Farmers having commodities to sell to the registered Buyers; Providing evacuation and transportation logistics solutions to the farmers and buyers who wish to transport their goods to any farms or markets of their choice through a network of pickup trucks which are known as Agri-Response Vehicles (ARVs) at a highly competitive rate of Rs. 0.02 per kg / km.	G2C	1. Village 2. Block Office 3. District HQ 4. State HQ	Daily	DFC, Online	<b>Real Time</b>
AFW.96	Exposure trip for award winning/progressive farmers under Farmers Institute scheme	Award winning/ progressive farmers are taken for exposure visits/study tour to Agriculture Research Stations, Agriculture Universities, farm etc.	G2C		Annually	To be defined in second phase of Implementation	To be defined in second phase of Implementation
AFW.100	Exhibition/ Festivals/ Shows (Mela)	Exhibitions of Horticulture produce/products by farmers/ Entrepreneurs	G2B		-	To be defined in second phase of Implementation	To be defined in second phase of Implementation

Service Code	Service Name	Description	Service Type	Service Delivery Location	Service Frequency	Service Delivery Channel	Service Level (Days)
AFW.101	Application for Stall in North East Food Show	The North-East Food Show is an opportunity for entrepreneurs of the North-East to meet and interact with National & Global majors of the Food & Beverage Industry to better understand, build connections, anticipate consumer needs and familiarize themselves with the latest trends in the industry for export promotion and up-scaling their businesses to global standards. The entrepreneurs/firms/companies who wish to participate in the B2B platform can fill in the application form either through online or offline mode with the due payment as stall charges. Any National or International firm/enterprise/company can avail this service.	G2B		-	To be defined in second phase of Implementation	To be defined in second phase of Implementation
AHS.01	Distribution and Management of Livestock	The department has 13 pig farms for producing improved breeds like introduced Hampshire, Saddle Back and other Cross Breed Pigs for supplying piglets inputs for supplying to the farmers to generate employment and for upgradation of local indigenous stock so that production level is enhanced. Also, to improve the economic livelihood of the rural poor and landless labours.	G2C	1. Village 2. State HQ 3. Block Office 4. District HQ	Annually	Government Farms	To be defined during phase of implementation

Service Code	Service Name	Description	Service Type	Service Delivery Location	Service Frequency	Service Delivery Channel	Service Level (Days)
AHS.02	Treatment of ailing Animals and Birds	A network of Veterinary Hospitals and Dispensaries manned by qualified Veterinarian have been established in the State for undertaking treatment of ailing animals and birds. At present the Department has a network of 4 Hospitals and 114 Veterinary Dispensaries besides 15 Mobile Dispensaries and 7 Vigilance Unit for Animal Health Care.	G2C	1. Village 2. State HQ 3. Block Office 4. District HQ	As and when required	To be defined in second phase of Implementation	To be defined in second phase of Implementation
AHS.03	Artificial insemination for Cattle Breeding	For all round development of Cattle wealth in the different parts of the State, various development programmes such as Cattle Breeding Farms for producing inputs for distribution are established. Four Cattle breeding farms e.g. Indo Danish Project, Upper Shillong, (East Khasi Hills); Regional Cross Bred Cattle Breeding Farm, Kyrdekulai (Ri Bhoi district); Cattle Farm, Khliehtyrshi, (Jaintia Hills district) and Livestock Farm, Rongkhon (West Garo Hills) have been established to produce improved breeding stock for development of cattle in the State to boost up production of milk	G2C		As and when required	Veterinary Hospitals	Service will be delivered in <b>7 days</b>

Service Code	Service Name	Description	Service Type	Service Delivery Location	Service Frequency	Service Delivery Channel	Service Level (Days)
AHS.06	Training of AHVT farmers	The object of the scheme is to impart training to farmers, beneficiaries on improved livestock and poultry farming, proper management, feeding and health care of livestock and poultry. The Department has established 6 Vocational training Centers to conduct training to farmers.	G2C	1. District HQ	Bi-annually	DFC	Service will be delivered in maximum <b>3 months</b>
AHS.07	Providing Demonstration & training to internal staff	The Cattle Breeding Farms also serve as the visual demonstration units in scientific method of rearing, feeding and management of cattle which includes fodder cultivation.	G2E		Once in 5 yrs	Government Farms	As and when required
AHS.08	Poultry Development Programme	The Poultry Development Programme of the State has, therefore, been directed towards increasing productivity of the poultry of the State by introducing improved breeds. The Department has set up Poultry Farms. The objective of these farms is to serve the purpose of experimentation, demonstration and production of eggs beside the main purpose for rearing chicks for distribution amongst the poultry rearers.	G2C	1. State HQ 2. District HQ	Bi-annually	Government Farms	1 Month
AHS.10	Preventive measures through vaccination	The Veterinary hospitals and dispensaries are taking preventive measures through vaccination for controlling specific diseases.	G2C	1. Village 2. State HQ 3. Block Office 4. District HQ	As and when required	To be defined in second phase of Implementation	To be defined in second phase of Implementation
FIS.01	Technical and Financial Assistance for Establishment of Fisheries Infrastructure	Any individual of the state except(Central/State Govt. Employee), with a water area of at least 0.1 Ha	G2B	1. District HQ	Once in a lifetime	Online, DFC	Service will be delivered in <b>7 days</b>

Service Code	Service Name	Description	Service Type	Service Delivery Location	Service Frequency	Service Delivery Channel	Service Level (Days)
FIS.12	Input Distribution	Any Citizen/Beneficiaries who has an existing pond or a newly constructed project can avail this services.	G2C	1. District HQ	As and when required	DFC	Service will be delivered in <b>7 days</b>
FIS.13	Product Selling	Any Individual/Society/SHG can avail this service beside having a good connection with the beneficiaries for the supply of Fish for selling in the retail outlet.	G2C		-	To be defined in second phase of Implementation	To be defined in second phase of Implementation
FIS.14	Training	Any Citizen who already have a fish pond and has interest in Fish Farming can avail this service. Beneficiaries who are assisted under the scheme will have to undergo training at MSFRTI institute.	G2C	1. District HQ	As and when required	DFC	Service will be delivered in maximum <b>3 months</b>
FIS.15	Supply Chain	Any Individual/Society/SHG can avail the '[schemes.	G2B	1. District HQ	As and when required	To be defined in second phase of Implementation	To be defined in second phase of Implementation
TEX.04	Plantation of Mulberry, Eri and Muga	Plantation Development Sericulture Farmers having plot of land	G2C	1. District HQ	Annually	Online, DFC	Service will be delivered in <b>7 days</b>
TEX.05	Financial Assistance for Establishment of Infrastructure	Construction of Grainage for production of Dfls. Sericulture farmers having plot of land.	G2C	1. District HQ	Annually	Online, DFC	Service will be delivered in <b>7 days</b>
TEX.06	Supply of rearing appliances	Supplies of rearing appliances to Sericulture farmers. Sericulture farmers having plantation.	G2C	1. District HQ	Annually	To be defined in second phase of Implementation	To be defined in second phase of Implementation
TEX.08	Purchase of Cocoons by Silk Reeling Unit	Marketing Support to Sericulture farmers.	G2C	1. District HQ	Weekly	To be defined in second phase of Implementation	To be defined in second phase of Implementation
TEX.10	Sale of Yarn through Mini Yarn Bank	Sale of Yarn to the Private Weavers at Millgate Price for Private Weavers having own Looms	G2C	1. District HQ	As and When Required	To be defined in second phase of Implementation	To be defined in second phase of Implementation
TEX.13	Distribution of Chowki worms and Silkworm eggs	Distribution of chowki reared worms and silkworm eggs to the sericulture farmers . Sericulture Farmers	G2C	1. District HQ	As and When Required	To be defined in second phase of Implementation	To be defined in second phase of Implementation

Service Code	Service Name	Description	Service Type	Service Delivery Location	Service Frequency	Service Delivery Channel	Service Level (Days)
TEX.14	Establishment of Handloom Weaving Training Centre	Imparting Training on handloom. Unemployed youth of the State	G2C	1. District HQ	Annually	To be defined in second phase of Implementation	To be defined in second phase of Implementation
TEX.15	Supply of Yarn to the Weavers	Distribution of yarns free of cost to Private Weaver Eligibility: Weavers of the state of Meghalaya having his/her own Looms .	G2C	1. District HQ	Annually	To be defined in second phase of Implementation	To be defined in second phase of Implementation
AFW.102	Integrated Pig/ Poultry – Fish Vegetable Farming	Provide technical and financial assistance to farmers for setting up integrated pig/ poultry – fish vegetable farming.	G2C		As and when required	To be defined upon finalization of service	Proposed New Service
AHS.12	Animal Quarantine & Certification Service	The purpose and scope of setting up of QUARANTINE Stations is to prevent the ingress of dangerous exotic diseases into the country through imported livestock and livestock products.	G2C		As and when required	To be defined upon finalization of service	Proposed New Service
AFW.103	Seed Production and Quality Certification	Testing of seed samples and provide quality certification based on samples.	G2C		As and when required	To be defined upon finalization of service	Proposed New Service
FIS.16	Soil and water analysis for Fresh Water Aquaculture	Testing of Sample submitted by Pond owner for checking water and soil quality for better produce of fish	G2C		As and when required	To be defined upon finalization of service	Proposed New Service
FIS.17	Microbiological analysis of water sample	Testing of Water Sample for parasites/ bacteria in pond water	G2C		As and when required	To be defined upon finalization of service	Proposed New Service
FIS.18	Clinical diagnosis of fish disease	Diagnosis of disease in fish sample provided	G2C		As and when required	To be defined upon finalization of service	Proposed New Service
FIS.19	Cold Storage	Provide cold storage infrastructure for stocking of fish.	G2C		As and when required	To be defined upon finalization of service	Proposed New Service

Note: The proposed Service Levels are considering that the funding/ stock is available, and the applicant is eligible to avail that benefit.

## 9.6.1 Future State Service Catalogue – Agriculture &amp; Farmers Welfare

Service Code	Service Name	Description
<b>Financial Assistance</b>		
AFW.02	Financial Assistance for Establishment of Agriculture Infrastructure	Financial Assistance to farmers for creation of pits for composting, irrigation systems, Fruit Gardens, Nurseries, Rearing Houses, Vermi Compost Shed, Workshed etc.
AFW.05	Providing infrastructure for seed production by farmers' producer groups.	Construction of seed processing unit- cum- seed storage go down for strengthening and modernizing the infrastructure for seed production, storage, certification and quality control of certified seeds.
AFW.07	Financial Assistance for Purchase of Machinery	Financial Assistance to farmers for purchase of farm equipments and machinery including Honeybee colony, hives, Plant Protection Equipments, Power Tiller, Tractor etc.
AFW.17	Creation of water harvesting structure under PMKSY-PDMC	Construction of Check dams/ponds etc with field canals/ piping network for conveyance of water
AFW.23	Transfer of Funds to Allied Departments under RKVY	Funds received from GOI is transferred from Department of Agriculture & Farmers Welfare to Allied sectors i.e. Horticulture, AH & Vety, Soil & Water Conservation, Fisheries and Co-operation Department for infrastructure development, Production and growth in Agriculture Projects under RKVY.
AFW.24	Crop Insurance to Farmers	Providing subsidy on the premium of crop insurance paid by farmers
AFW.29	Financial Assistance for Production Activities	Production & disbursement of quality seedlings to farmers and assistance for existing plants, Plantation of Mulberry and compost making for coconut, kiwi fruits, grapes, passion fruit, sweet potato, colocasia, tapioca etc.
AFW.46	Income support to farmers through Pradhan Mantri Kisan Samman Nidhi (PMKISAN)	Financial assistance to land holding farmers @ Rs 6000 in 3 Installments
AFW.51	Transfer of funds under National Bamboo Mission	Fund received from GOI under National Bamboo Mission is transferred to Soil and water conservation Department for implementation of services under the project.
AFW.57	Providing Scholarship and Stipend to Students and Unemployed	Sponsoring Students for undergoing 4 years BSc. Agri/Hort Course against State quota and Training of Educated Rural Unemployed Youths on Farm based Activities for the purpose of starting farm-based enterprise.
AFW.63	Providing Financial Assistance for Integrated farming to the farmer	Promotion of Integrated Farming System ( IFS) on a cluster approach through NMSA (RAD) Scheme.
AFW.83	Assistance for Setting up of pineapple stockyard and mini processing unit under the project scheme article 275(1) of the constitution of India	Pineapple stockyard will be established at Mawphrew village thereby helping the farmers in assimilating their produce for easier transporting, marketing and also to create a pineapple stock pile to be utilized as raw material in mini processing unit. The mini processing unit will serve as food processing and value addition with the core objective of providing sustainable livelihood to the pineapple growers of Mawphrew village ribhoi district
<b>Informational Services</b>		
AFW.15	Daily Market Price Information on Agriculture/Horticulture Commodities	To provide the market price of Agriculture/Horticulture Commodities to the farmers, buyers, sellers and citizens on a daily basis.
AFW.16	Distribution of Soil Health Card to Farmers	Soil health card provides the prescription to the farmers on how to use fertilizers for their crops grown in the soil which they have given for soil testing.
AFW.20	Testing of seed samples collected from the farmers	Testing of seed for moisture content, germination %, purity
AFW.35	Release of promising varieties\lines of different crops under Agri Research Station and Labs Scheme.	Field experimental trails on different crops in various locations for studying the adaptability, Suitability and performance of different varieties under different conditions.
AFW.43	Information Services under Agri/Hort Information Scheme	Disseminating information on scientific methods of cultivation to extension staff and farming community through media such as pamphlets, leaflets, radio, television etc and participating/holding awareness programmes by means of exhibition, seminar etc.
AFW.91	1917 iTEAMS Agro Advisory, Market Connect and Transport Logistics	Providing farmers with timely and accurate information for proper decision making. Farmers can call the toll free number of 1917 for any queries related to Agriculture, Horticulture, Fisheries, Animal Husbandry,

Service Code	Service Name	Description
		Apiculture and Sericulture; Providing information about potential markets and sellers and making farmers and buyers aware of the different selling / buying options available to them. 1917iTEAMS connects the registered Farmers having commodities to sell to the registered Buyers; Providing evacuation and transportation logistics solutions to the farmers and buyers who wish to transport their goods to any farms or markets of their choice through a network of pickup trucks which are known as Agri-Response Vehicles (ARVs) at a highly competitive rate of Rs. 0.02 per kg / km.
<b>Inputs Distribution</b>		
AFW.06	Distribution of Seeds to Farmers	Production, Procurement and distributions of seeds and saplings for different crops and fruits
AFW.13	Distribution of Organic Manure	Procurement of Organic Manure and distribution to the beneficiaries for Demonstration
AFW.21	Providing Inputs to Farmers	Provide Inputs to farmers increasing crop production including Bio Pesticides, Bio Agents, Hybrid Seeds
AFW.37	Distribution of Machineries and Equipments	Distribution of Wire Mesh, Polythene Sheet, Conoweeder, Manual Sprayer, pipes etc.
<b>Product Selling</b>		
AFW.11	Sale of Planting Materials	Production, multiplication & disbursement/sale of planting materials like fruit plants, vegetable seeds and seedlings, tree saplings, plantation crops, mushroom spawn, flower seeds and seedlings, Ginger rhizome etc.
AFW.41	Sale of Processed Products through Meg Sale Outlet	Utilization of surplus fruits and vegetables and conversion of the same into marketable processed products. The processed food products which ranges from squashes, jams, jellies, RTS, drinks, marmalades, canned fruits, etc. are marketed under the brand name MEG. Consumers can buy Meg products at the MEG Retail outlet and the Fruit Preservation Centre Shillong and Dainadubi.
<b>Supply Chain</b>		
AFW.74	Community canning	Any individual who has surplus raw materials (fruits) from their orchards/farms can bring them for processing into their desired final product.
AFW.101	Application for Stall in North East Food Show	The North-East Food Show is an opportunity for entrepreneurs of the North-East to meet and interact with National & Global majors of the Food & Beverage Industry to better understand, build connections, anticipate consumer needs and familiarize themselves with the latest trends in the industry for export promotion and up-scaling their businesses to global standards. The entrepreneurs/firms/companies who wish to participate in the B2B platform can fill in the application form either through online or offline mode with the due payment as stall charges. Any National or International firm/enterprise/company can avail this service.
<b>Training Services</b>		
AFW.01	Provide Training and Awareness to Farmers	Assistance to farmers through awareness, orientation and training, distribution of printed package of best practices and demonstrations.
AFW.22	Training to Officials	To train the officers on various schemes and farming techniques
AFW.96	Exposure trip for award winning/progressive farmers under Farmers Institute scheme	Award winning/ progressive farmers are taken for exposure visits/study tour to Agriculture Research Stations, Agriculture Universities, farm etc.
AFW.100	Exhibition/ Festivals/ Shows (Mela)	Exhibitions of Agriculture/ Horticulture produce/products by farmers/ Entrepreneurs
<b>New Services</b>		
AFW.102	Integrated Poultry – Fish Vegetable Farming	Provide technical and financial assistance to farmers for setting up integrated poultry – fish vegetable farming.
AFW.103	Seed Production and Quality Certification	Testing of seed samples and provide quality certification based on samples.

## 9.6.2 Future State Service Catalogue – Animal Husbandry &amp; Veterinary

Service Code	Service Name	Description
<b>Inputs Distribution</b>		
AHS.01	Distribution and Management of Livestock	The department has 13 pig farms for producing improved breeds like introduced Hampshire, Saddle Back and other Cross Breed Pigs for supplying piglets inputs for supplying to the farmers to generate employment and for upgradation of local indigenous stock so that production level is enhanced. Also, to improve the economic livelihood of the rural poor and landless labours.
AHS.03	Artificial insemination for Cattle Breeding	For all round development of Cattle wealth in the different parts of the State, various development programmes such as Cattle Breeding Farms for producing inputs for distribution are established. Four Cattle breeding farms e.g. Indo Danish Project, Upper Shillong, (East Khasi Hills); Regional Cross Bred Cattle Breeding Farm, Kyrdekulai (Ri Bhoi district); Cattle Farm, Khliehtrshi, (Jaintia Hills district) and Livestock Farm, Rongkhon (West Garo Hills) have been established to produce improved breeding stock for development of cattle in the State to boost up production of milk
<b>Training</b>		
AHS.06	Training of AHVT farmers	The object of the scheme is to impart training to farmers, beneficiaries on improved livestock and poultry farming, proper management, feeding and health care of livestock and poultry. The Department has established 6 Vocational training Centers to conduct training to farmers.
AHS.07	Providing Demonstration & training to internal staff	The Cattle Breeding Farms also serve as the visual demonstration units in scientific method of rearing, feeding and management of cattle which includes fodder cultivation.
<b>Product Selling</b>		
AHS.08	Poultry Development Programme	The Poultry Development Programme of the State has, therefore, been directed towards increasing productivity of the poultry of the State by introducing improved breeds. The Department has set up Poultry Farms. The objective of these farms is to serve the purpose of experimentation, demonstration and production of eggs beside the main purpose for rearing chicks for distribution amongst the poultry rearers.
<b>Treatment Services</b>		
AHS.02	Treatment of ailing Animals and Birds	A network of Veterinary Hospitals and Dispensaries manned by qualified Veterinarian have been established in the State for undertaking treatment of ailing animals and birds.
AHS.10	Preventive measures through vaccination	The Veterinary hospitals and dispensaries are taking preventive measures through vaccination for controlling specific diseases.
<b>New Services</b>		
AHS.12	Animal Quarantine & Certification Service	Checking of animal farms and issuance of certificate.

### 9.6.3 Future State Service Catalogue – Fisheries Department

Service Code	Service Name	Description
<b>Financial Assistance</b>		
FIS.01	Technical and Financial Assistance for Establishment of Fisheries Infrastructure	Any individual of the state except(Central/State Govt. Employee), with a water area of at least 0.1 Ha
<b>Input Distribution</b>		
FIS.12	Input Distribution	Any Citizen/Beneficiaries who has an existing pond or a newly constructed project can avail this services.
<b>Product Selling</b>		
FIS.13	Product Selling	Any Individual/Society/SHG can avail this service beside having a good connection with the beneficiaries for the supply of Fish for selling in the retail outlet.
<b>Training</b>		
FIS.14	Training	Any Citizen who already have a fish pond and has interest in Fish Farming can avail this service. Beneficiaries who are assisted under the scheme will have to undergo training at MSFRTI institute.
<b>Supply Chain</b>		
FIS.15	Supply Chain	Any Individual/Society/SHG can avail the schemes.
<b>New Services</b>		
FIS.16	Soil and water analysis for Fresh Water Aquaculture	Testing of Sample submitted by Pond owner for checking water and soil quality for better produce of fish
FIS.17	Microbiological analysis of water sample	Testing of Water Sample for parasites/ bacteria in pond water
FIS.18	Clinical diagnosis of fish disease	Diagnosis of disease in fish sample provided
FIS.19	Cold Storage	Provide cold storage infrastructure for stocking of fish.

## 9.6.4 Future State Service Catalogue – Textiles Department

Service Code	Service Name	Description
<b>Financial Assistance</b>		
TEX.04	Plantation of Mulberry, Eri and Muga	Plantation Development Sericulture Farmers having plot of land
TEX.05	Financial Assistance for Establishment of Infrastructure	Construction of Grainage for production of Dfls. Sericulture farmers having plot of land.
<b>Inputs Distribution</b>		
TEX.06	Supply of rearing appliances	Supplies of rearing appliances to Sericulture farmers. Sericulture farmers having plantation.
TEX.13	Distribution of Chowki worms and Silkworm eggs	Distribution of chowki reared worms and silkworm eggs to the sericulture farmers . Sericulture Farmers
TEX.15	Supply of Yarn to the Weavers	Distribution of yarns free of cost to Private Weaver Eligibility: Weavers of the state of Meghalaya having his/her own Looms .
<b>Product Selling</b>		
TEX.10	Sale of Yarn through Mini Yarn Bank	Sale of Yarn to the Private Weavers at Millgate Price for Private Weavers having own Looms
TEX.08	Purchase of Cocoons by Silk Reeling Unit	Marketing Support to Sericulture farmers.
<b>Training</b>		
TEX.14	Establishment of Handloom Weaving Training Centre	Imparting Training on handloom. Unemployed youth of the State

## 9.7 Current State Business Interaction Matrix (Consuming)

	Consuming Business Services			
Providing Business Services	Agriculture & Farmers' Welfare	Animal Husbandry & Veterinary	Fisheries	Textiles
Agriculture & Farmers' Welfare		1. Funds for production growth 2. Fund for Infrastructure development	1. Funds for production growth. 2. Funds for infrastructure development	1. Fund for infrastructure development 2. Fund for production growth
Animal Husbandry & Veterinary	-		-	-
Commerce and Industry	1. Market Linkages - Agri Business 2. Demand for Agriculture Inputs and allied services like warehousing and cold storage to increase Agri capacity 3. Policy and Law Support - Import, Export, Trade Policy 4. Sector Development Roadmap 5. Supply of Machinery	1. Policy and Law Support - Import, Export, Trade Policy	1. Market linkages 2. Warehouse services 3. Export policy	-
Community and Rural Development	1. Labour component in convergence mode through MGNREGA 2. Help in distribution of Inputs (Seeds, Bio-Fertilizers, Bio-Pesticides, Saplings etc.)	1. Capacity Building	1. Capacity Building	-
Education	-	-	-	-
Excise Registration Taxation and Stamps	1. Land Registration/ Lease	1. Land Registration/ Lease	1. Land Registration/ Lease	-
Finance	1. Funds for implementation of Schemes 2. Scheme Funding 3. Sanctions and LOA	1. Funds for Implementation of Schemes 2. Sanctions for Funds 3. LOA	1. Funds for Implementation of Schemes 2. Sanctions for Funds 3. LOA	1. Funds for Implementation of Schemes 2. Sanctions for Funds 3. LOA
Fisheries	-	-		-
Food Civil Supplies and Consumers Affairs	-	-	-	-
Forest and Environment	-	-	-	Provides necessary land/ materials
Health and Family Welfare	-	-	-	-
Labour	Agriculture labour law and policies interventions	-	-	-

	Consuming Business Services			
Providing Business Services	Agriculture & Farmers' Welfare	Animal Husbandry & Veterinary	Fisheries	Textiles
Mining and Geology	-	-	-	-
Planning	1. Scheme monitoring and Evaluation 2. Sectoral strategy and Planning 3. Scheme Approval	1. Scheme monitoring and Evaluation 2. Sectoral strategy and Planning 3. Scheme Approval	1. Scheme monitoring and Evaluation 2. Sectoral strategy and Planning 3. Scheme Approval	1. Scheme monitoring and Evaluation 2. Sectoral strategy and Planning 3. Scheme Approval
Public Health Engineering	-	-	-	Water Related needs
Social Welfare	Social schemes related to Agriculture	-	-	-
Tourism	-	-	-	-
Transport	Supply chain transportation regulations	Supply chain transportation regulations	Supply chain transportation regulations	-
Sericulture	-	-	-	

## 9.8 Current State Business Interaction Matrix (Providing)

	Providing Business Services			
Consuming Business Services	Agriculture & Farmers' Welfare	Animal Husbandry & Veterinary	Fisheries	Textiles
Agriculture & Farmers' Welfare		-	-	-
Animal Husbandry & Veterinary	1. Funds for Production Growth 2. Funds for infrastructure development..		-	-
Fisheries	-	-		-
Commerce and Industry	1. Supply of Agriculture Demands	-	-	-
Community and Rural Development	-	-	-	-
Education	-	-	-	-
Excise Registration Taxation and Stamps	1. Provides raw material to Wineries/ Breweries	-	-	-
Finance	1. Funds by Sale of Products	1. Funds by Sale of Animals/ Products	1. Funds by Sale of Fishes	1. Funds by Sale from Government Farms/ Nurseries
Food Civil Supplies and Consumers Affairs	-	-	-	-
Forest and Environment	-	-	-	-
Health and Family Welfare	-	-	-	-
Labour	-	-	-	-
Mining and Geology	-	-	-	-
Planning	-	-	-	-
Public Health Engineering	-	-	-	-

	Providing Business Services			
Consuming Business Services	Agriculture & Farmers' Welfare	Animal Husbandry & Veterinary	Fisheries	Textiles
Social Welfare	-	-	-	-
Tourism	-	-	Infrastructure on fish sanctuaries	-
Transport	-	-	-	-
Textiles	-	-	-	

## 9.9 Service Stakeholder Matrix

Service Code	Service Name	Service Type	Finance Dept.	Planning Dept.	Agriculture	Fisheries	AHVT	Textiles	Line Departments	Citizens	Farmers	AG/CAG	Gol (Central Ministries)
AFW .01	Provide Training and Awareness to Farmers	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal	Provide Training					Apply for Service	Apply for Service	Audit	Funding
AFW .02	Financial Assistance for Establishment of Agriculture Infrastructure	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal	Approval and Transfer of Funds						Apply for Service	Audit	Funding
AFW .05	Providing infrastructure for seed production by farmers' producer groups.	G2G	Issuance of Sanction, LOA and Funds	Approval of Proposal	Create Infrastructure through Line Departments				Receive Funds for Implementation of Scheme			Audit	Funding
AFW .06	Distribution of Seeds to Farmers	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal	Procure and Distribute						Apply for Service	Audit	Funding
AFW .07	Financial Assistance for Purchase of Machinery	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal	Approval and Transfer of Funds						Apply for Service	Audit	Funding
AFW .11	Sale of Planting Materials	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal	Procure and Sale						Apply for Service	Audit	Funding
AFW .13	Distribution of Organic Manure	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal	Procure and Distribute						Apply for Service	Audit	Funding
AFW .15	Daily Market Price Information on Agriculture/Horticulture Commodities	G2C			Capture Information from Markets					View Price Information	View Price Information		

Service Code	Service Name	Service Type	Finance Dept.	Planning Dept.	Agriculture	Fisheries	AHVT	Textiles	Line Departments	Citizens	Farmers	AG/CAG	Gol (Central Ministries)
AFW .16	Distribution of Soil Health Card to Farmers	G2C		Approval of Proposal	Collection , Testing and Provide testing results with recommendation								
AFW .17	Creation of water harvesting structure under PMKSY-PDMC	G2G	Issuance of Sanction, LOA and Funds	Approval of Proposal	Transfer of Funds				Receive Funds for Implementation of Scheme			Audit	Funding
AFW .20	Testing of seed samples collected from the farmers	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal	Collection , Testing and Provide testing results with recommendation						Apply for Service	Audit	Funding
AFW .21	Providing Inputs to Farmers	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal	Procure and Provide Inputs						Apply for Service	Audit	Funding
AFW .22	Training to Officials	G2E			Provide Training	Provide Training	Provide Training	Provide Training					
AFW .23	Transfer of Funds to Allied Departments under RKVY	G2G	Issuance of Sanction, LOA and Funds	Approval of Proposal	Approval and Transfer of Funds				Receive Funds for Implementation of Scheme			Audit	Funding
AFW .24	Crop Insurance to Farmers	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal	Approval and Transfer of Funds						Apply for Service	Audit	Funding
AFW .29	Financial Assistance for Production Activities	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal	Approval and Transfer of Funds			Approval and Transfer of Funds			Apply for Service	Audit	Funding

Service Code	Service Name	Service Type	Finance Dept.	Planning Dept.	Agriculture	Fisheries	AHVT	Textiles	Line Departments	Citizens	Farmers	AG/CAG	Gol (Central Ministries)
AFW .35	Release of promising varieties/lines of different crops under Agri Research Station and Labs Scheme.	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal	Research and release of promising varieties					Avail Benefits	Avail Benefits	Audit	Funding
AFW .37	Distribution of Machineries and Equipments	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal	Procure and Provide Machinery and Equipments			Approval and Transfer of Funds			Apply for Service	Audit	Funding
AFW .41	Sale of Processed Products through Meg Sale Outlet	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal	Procuring fruits, Processing and Selling							Audit	
AFW .43	Information Services under Agri/Hort Information Scheme	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal	Disseminate information							Audit	
AFW .46	Income support to farmers through Pradhan Mantri Kisan Samman Nidhi (PMKISAN)	G2C			Processing and Verification						Apply for Service	Audit	Funding
AFW .51	Transfer of funds under National Bamboo Mission	G2G	Issuance of Sanction, LOA and Funds	Approval of Proposal	Transfer of Funds				Receive Funds for Implementation of Scheme			Audit	Funding
AFW .57	Providing Scholarship and Stipend to Students and Unemployed	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal	Approval and Transfer of Funds					Apply for Service		Audit	Funding

Service Code	Service Name	Service Type	Finance Dept.	Planning Dept.	Agriculture	Fisheries	AHVT	Textiles	Line Departments	Citizens	Farmers	AG/CAG	Gol (Central Ministries)
AFW .63	Providing Financial Assistance for Integrated farming to the farmer	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal	Provide Livestock						Apply for Service	Audit	Funding
AFW .74	Community canning	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal	Provide Infrastructure for Food Processing							Audit	Funding
AFW .83	Assistance for Setting up of pineapple stockyard and mini processing unit under the project scheme article 275(1) of the constitution of India	G2G	Issuance of Sanction, LOA and Funds	Approval of Proposal	Transfer of Funds				Receive Funds for Implementation of Scheme			Audit	Funding
AFW .91	1917 iTEAMS Agro Advisory, Market Connect and Transport Logistics	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal	Provide Information and necessary support						Call	Audit	Funding
AFW .96	Exposure trip for award winning/progressive farmers under Farmers Institute scheme	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal	Arrange Trips							Audit	
AFW .100	Exhibition/ Festivals/ Shows (Mela)	G2B	Issuance of Sanction, LOA and Funds	Approval of Proposal	Arrange Shows/ Festivals						Apply for Service	Audit	Funding
AFW .101	Application for Stall in North East Food Show	G2B			Verification & Approval						Apply for Service		

Service Code	Service Name	Service Type	Finance Dept.	Planning Dept.	Agriculture	Fisheries	AHVT	Textiles	Line Departments	Citizens	Farmers	AG/CAG	Gol (Central Ministries)
FIS.01	Technical and Financial Assistance for Establishment of Fisheries Infrastructure	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal		Approval				Apply for Service	Apply for Service	Audit	Funding
FIS.12	Input Distribution	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal		Procure and Distribute					Apply for Service	Audit	Funding
FIS.13	Product Selling	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal		Procure and Sale						Audit	Funding
FIS.14	Training	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal		Provide Training				Apply for Service	Apply for Service	Audit	Funding
FIS.15	Supply Chain	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal		Manage Supply Chain				Avail Service	Avail Service	Audit	Funding
AHS.01	Distribution and Management of Livestock	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal			Distribute and Manage				Apply for Service	Audit	Funding
AHS.02	Treatment of ailing Animals and Birds	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal			Provide treatment					Audit	Funding
AHS.03	Artificial insemination for Cattle Breeding	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal			Provide necessary support				Apply for Service	Audit	Funding
AHS.06	Training of AHVT farmers	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal			Provide Training			Apply for Service	Apply for Service	Audit	Funding
AHS.07	Providing Demonstration & training to internal staff	G2E	Issuance of Sanction, LOA and Funds	Approval of Proposal			Provide Training					Audit	Funding

Service Code	Service Name	Service Type	Finance Dept.	Planning Dept.	Agriculture	Fisheries	AHVT	Textiles	Line Departments	Citizens	Farmers	AG/CAG	Gol (Central Ministries)
AHS. 08	Poultry Development Programme	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal			Implement Scheme				Apply for Service	Audit	Funding
AHS. 10	Preventive measures through vaccination	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal			Procure and Provide Vaccination				Apply for Service	Audit	Funding
TEX. 04	Plantation of Mulberry, Eri and Muga	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal				Approval and Transfer of Funds			Apply for Service	Audit	Funding
TEX. 05	Financial Assistance for Establishment of Infrastructure	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal				Approval and Transfer of Funds			Apply for Service	Audit	Funding
TEX. 06	Supply of rearing appliances	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal				Verify & Approve			Apply for Service	Audit	Funding
TEX. 08	Purchase of Cocoons by Silk Reeling Unit	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal				Purchase of Silk Cocoons		Apply for Service	Apply for Service	Audit	Funding
TEX. 10	Sale of Yarn through Mini Yarn Bank	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal				Procure and Sale				Audit	Funding
TEX. 13	Distribution of Chowki worms and Silkworm eggs	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal				Procure and Distribute		Apply for Service	Apply for Service	Audit	Funding
TEX. 14	Establishment of Handloom Weaving Training Centre	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal				Provide Training		Apply for Service	Apply for Service	Audit	Funding
TEX. 15	Supply of Yarn to the Weavers	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal				Procure and Distribute		Apply for Service	Apply for Service	Audit	Funding

Service Code	Service Name	Service Type	Finance Dept.	Planning Dept.	Agriculture	Fisheries	AHVT	Textiles	Line Departments	Citizens	Farmers	AG/CAG	Gol (Central Ministries)
AFW.102	Integrated Pig/Poultry – Fish Vegetable Farming	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal	Approval and Transfer of Funds	Approval	Approval			Apply for Service	Apply for Service	Audit	
AHS.12	Animal Quarantine & Certification Service	G2C	Issuance of Sanction, LOA and Funds	Approval of Proposal			Health Check and Certification				Apply for Service	Audit	
AFW.103	Seed Production and Quality Certification	G2C			Testing and Certification						Apply for Service		
FIS.16	Soil and water analysis for Fresh Water Aquaculture	G2C				Testing and Report				Avail Report	Apply for Service		
FIS.17	Microbiological analysis of water sample	G2C				Testing and Report				Avail Report	Apply for Service		
FIS.18	Clinical diagnosis of fish disease	G2C				Testing and Report				Avail Report	Apply for Service		
FIS.19	Cold Storage	G2B				Provide Facility on Payment				Apply for Service	Apply for Service	Audit	

## 9.10 Future State Business Interaction Matrix

Providing Business Services	Consuming Business Services					
	Primary	Human Development	Infrastructure Development	Environment	Entrepreneurship	Governance
Primary		1. Provide grains (Rice & Wheat) for distribution 2. Training & Capacity Building	Infrastructure	NA	1. Supply of Demands 2. Jobs to Textile Designers	1. Funds by sale of Products
Human Development	1. Social Security schemes related to Farmers 2. Health Insurance to Farmers 3. Capacity building of Farmers 4. Help in distribution of Inputs (Seeds, Fertilizers, Pesticides, Saplings etc.)					
Infrastructure Development	1. Transport Facilities					
Environment	1. Soil Testing/Soil Survey 2. Sustainable agriculture practices 3. Promotion of organic cultivation 4. Production and promotion of Bio-control agents for organic Plant Health Management 5. Promotion and Mobilization of organic inputs at farm level					

Providing Business Services	Consuming Business Services					
	Primary	Human Development	Infrastructure Development	Environment	Entrepreneurship	Governance
Entrepreneurship	1. Market Linkages - Agri Business 2. Demand for Agriculture Inputs and allied services like warehousing and cold storage to increase Agri capacity 3. Policy and Law Support - Import, Export, Trade Policy 4. Sector Development Roadmap 5. Supply of Machinery					
Governance	1. Financial regulations - Minimum Support price, etc. 2. Scheme Funding 3. Sanction of Funds 4. Approval on Scheme Annual Action Plan 5. Issuance of LOA 6. Scheme monitoring and Evaluation 7. Sectoral Strategy and Planning					

## 9.11 Service Application Module Mapping

Services	Register for Service/Service Resolution	Service Internal Processing	Additional System
	Application Module	Application Module	Application Module
Distribution of Seeds to Farmers	Primary Sector Application - Service List	Primary Sector Application - Stock Management Supply Chain Mgmt	Aadhaar (Eligibility & Identity Verification), iOBS for funds sanctioning and TreasuryNet for transfer of Funding to Vendor for Procurement
Financial Assistance for Purchase of Machinery	Primary Sector Application - Service List	Primary Sector Application - Scheme Management Supply Chain Mgmt	Aadhaar (Eligibility & Identity Verification), iOBS for funds sanctioning and TreasuryNet for transfer of Funding
Daily Market Price Information on Agriculture/Horticulture Commodities	1917 System	State Portal	
Testing of seed samples collected from the farmers	Primary Sector Application - Service List		Aadhaar (Eligibility & Identity Verification)
Providing Inputs to Farmers	Primary Sector Application - Service List	Primary Sector Application - Scheme Management Supply Chain Mgmt	Aadhaar (Eligibility & Identity Verification), iOBS for funds sanctioning and TreasuryNet for transfer of Funding to Vendor for Procurement
Distribution of Fish Seeds/ Feed to Fisheries Farmers	Primary Sector Application - Service List	Primary Sector Application - Scheme Management Supply Chain Mgmt	Aadhaar (Eligibility & Identity Verification), iOBS for funds sanctioning and TreasuryNet for transfer of Funding to Vendor for Procurement
Crop Insurance to farmers	Primary Sector Application - Service List	Primary Sector Application - Service List	Aadhaar (Eligibility & Identity Verification), iOBS for funds sanctioning and TreasuryNet for transfer of Funding
Financial Assistance for Production Activities	Primary Sector Application - Service List	Primary Sector Application - Scheme Management Supply Chain Mgmt	Aadhaar (Eligibility & Identity Verification), iOBS for funds sanctioning and TreasuryNet for transfer of Funding
Provide Training and Awareness to Farmers	Primary Sector Application - Service List	LMS for Training	Aadhaar (Eligibility & Identity Verification)
Training of AHVT farmers	Primary Sector Application - Service List	LMS for Training	Aadhaar (Eligibility & Identity Verification)
Training to fisheries farmers on fishing activities	Primary Sector Application - Service List	LMS for Training	Aadhaar (Eligibility & Identity Verification)
Information Services under Agri/Horti Information Scheme	1917 System		
Income support to farmers through Pradhan Mantri Kisan Samman Nidhi (PMKISAN)	Primary Sector Application - Service List	State DBT for benefit Transfer	Aadhaar (Eligibility & Identity Verification)
Distribution of Machineries and Equipments	Primary Sector Application - Service List	Primary Sector Application - Stock Management Supply Chain Mgmt	Aadhaar (Eligibility & Identity Verification), iOBS for funds sanctioning and TreasuryNet for transfer of Funding to Vendor for Procurement
Providing Scholarship and Stipend to Students and Unemployed	Primary Sector Application - Service List		Aadhaar (Eligibility & Identity Verification), iOBS for funds sanctioning and TreasuryNet for

Services	Register for Service/Service Resolution	Service Internal Processing	Additional System
	Application Module	Application Module	Application Module
			transfer of Funding to Vendor for Procurement
Financial Assistance for Establishment of Agriculture Infrastructure	Primary Sector Application - Service List	Primary Sector Application - Scheme Management Supply Chain Mgmt	Aadhaar (Eligibility & Identity Verification), iOBS for funds sanctioning and TreasuryNet for transfer of Funding
1917team Agri Advisory, Market Connect and Transport Logistics	1917 System	Primary Sector Application - Supply Chain Mgmt	
Financial and Technical Assistance for Establishment of Fisheries Infrastructure	Primary Sector Application - Service List	iOBS, TreasuryNet for transfer of Benefit	Aadhaar (Eligibility & Identity Verification)
Distribution, Care and management of piglets	Primary Sector Application - Service List	Primary Sector Application - Stock Management Supply Chain Mgmt	Aadhaar (Eligibility & Identity Verification)
Artificial insemination for Cattle Breeding	Primary Sector Application - Service List	Primary Sector Application - Stock Management Supply Chain Mgmt Insemination	
Crossbreeding under Intensive Cattle Development Projects	Primary Sector Application - Service List	Primary Sector Application - Stock Management Supply Chain Mgmt Cross Breeding	
Providing Demonstration & training to internal staff	Primary Sector Application - Service List	LMS for Training	
Poultry Development Programme	Primary Sector Application - Service List		
Providing Support for Development of Plantation of Mulberry	Primary Sector Application - Service List	iOBS, TreasuryNet for transfer of Benefit	Aadhaar (Eligibility & Identity Verification)
Financial Assistance for Establishment of Sericulture Infrastructure	Primary Sector Application - Service List	iOBS, TreasuryNet for transfer of Benefit	Aadhaar (Eligibility & Identity Verification)

## 9.12 Functions of Department Agencies

Agency/ Directorate	Function
<b>Directorate of Agriculture</b>	The prime function of Directorate of Agriculture is budgeting, formulating and implementing farmer-oriented Schemes of the State and Centre for the development of Food crops (Food grains, pulses, oil seeds, cash crops etc.) and for harnessing the potential of human and natural resources available in the State. It provides Agriculture related technical advice and services to the farmers.
<b>Directorate of Horticulture</b>	The functions of Directorate of Horticulture is budgeting, formulating and implementing farmer-oriented schemes of the State and Centre for the development of horticulture to the maximum potential available in the state and to augment production of all horticultural products including fruits, vegetables, flowers, plantation crops, spices, medicinal aromatic plants in the state.
<b>Meghalaya State Agricultural Marketing Board</b>	The functions of the Meghalaya State Agricultural Marketing Board (MSAMB) is to regulate Marketing practices in Notified markets in the State, establishment and proper administration of markets for agricultural produce, provide effective infrastructure for marketing of agricultural produce and Real time market information.
<b>Meghalaya Small Farmers Agri-Business Consortium</b>	The functions of Meghalaya Small Farmers Agri-Business Consortium (SFAC) is to facilitate any Developmental Programmes on Agri-Horticultural sector and to promote Farmers Producers Organizations (FPOs). MgSFAC act as an agency to channelize fund, preparation of Annual Action Plan, Monitoring & filed evaluation, progress Report etc. for the scheme under the Horticulture Mission for North East & Himalayan States (HMNEH) which is a Centrally Sponsored Scheme.
<b>Directorate of Food Processing</b>	The functions of the Directorate of Food Processing are to develop entrepreneurship in the state by creating a network with academic, research and technology dispensing institutions of the country; facilitate training programmes in reputed food research institutions; help farmers gather remunerative prices for their produce thereby bridging the gap between agricultural value-chain; expanding the market for the processed products through organizing festivals, participation or hosting exhibitions and sourcing technologies from various Research & Technology generating organizations. The Directorate implements the Mission Jackfruit and is also the State Nodal Agency for the Centrally Sponsored Scheme for Formalization of Micro Food Processing Enterprises besides assisting the establishment of food processing units under the RKVY Scheme.

Agency/ Directorate	Function
<b>Directorate of Research, Training &amp; Technology Induction</b>	The directorate oversees the research functions, training and technology needs of the directorate employees and farmers.
<b>Directorate of Animal Husbandry and Veterinary</b>	<p>The Directorate of Animal Husbandry and Veterinary looks after all aspect of Livestock and Poultry Development. The activities and functions of the Department are centred around the following broad objectives:</p> <ol style="list-style-type: none"> <li>1. Providing protection to livestock and poultry from the ravages of diseases through treatments and preventive vaccinations.</li> <li>2. Introducing improved breeding techniques for upgrading the local stock .</li> <li>3. Ensuring better Animal Husbandry practices through adoption of Extension and Research.</li> <li>4. Building up of adequate technical and professional manpower through Education and Training.</li> <li>5. Encouraging setting of Livestock and Poultry Industries.</li> </ol>
<b>Directorate of Fisheries</b>	The Directorate of Fisheries is entrusted with all developmental activities in the Fisheries Sector. The activities include, Horizontal Expansion of Culture area, critical infrastructure development, Capacity building and conservation of indigenous resources.
<b>Fish Farmers' Development Agency (FFDA)</b>	<p>The main objectives of the Agency are to:</p> <ol style="list-style-type: none"> <li>1. Progressively bring all fallow culturable fishery resources under optimum fish production.</li> <li>2. Train popularise a new vocation of fish culture.</li> <li>3. Be a nucleus for spreading fish farming in other areas.</li> <li>4. Strengthen the rural economy.</li> </ol>
<b>Meghalaya State Fishery Co-operative Federation</b>	<p>The major focus of the mission is on the poor who cannot procure the necessary inputs and sell the output on their own. If the farmers get together and form a society, they can conduct the business enterprise more efficiently. Many of the interventions of the Mission can be implemented through the co-operatives. The activities that can be entrusted to the co-operatives are:</p> <ol style="list-style-type: none"> <li>1. Creation of co-operative fish ponds</li> <li>2. Supply of portable FRP hatcheries</li> <li>3. Management of fish feed mills</li> <li>4. Marketing processing of fish</li> <li>5. Capacity building of the farmers.</li> </ol>
<b>Directorate of Dairy Development</b>	<p>The major functions of the directorate are as below:</p> <p>(a) To generate livelihood through milch cattle for rural people of Meghalaya.</p>

Agency/ Directorate	Function
	(b) To create and build the capacities of dairy cooperatives. (c) To educate, train and encourage people to get into dairy farming to produce hygienic milk.
<b>Directorate of Sericulture and Weaving</b>	Sericulture and Weaving in Meghalaya are the two most important cottage based, eco-friendly industries in the rural areas. These twin industries portray the cultural ethos and rich heritage of the people of the State. In the absence of a textile industry, Sericulture and Weaving can play an important role for the production of Silk fabrics and hand-woven fabrics of ethnic designs. Till date around 15,900 families are involved in handloom activities and 16,000 families in Sericulture farming. The infrastructure of the Department was inherited from the erstwhile Assam Government and it became a full-fledged Department under the Government of Meghalaya in the year 1979.

## 9.13 MeghEA Meta Model

The MeghEA Meta Model describes the types of entities described in various architecture domains and the relationships between them. Entities are key subject areas that every reference model in IndEA framework focuses on (example: Business architecture focuses on Business services entities). The model illustrates the different types of entities, which are described by the MeghEA architecture domain such as entity types (the types of information described by the architecture domain example – Application), Relationships (connection between entity types within and across layers).

**What to achieve:** The **Goals** of the State-Sustainable Development Goals and its **indicator**, defined in the State SDG has been used to measure success of the service delivery in terms of measurable, smart and actionable goals. As a part of the **transformation** plan, it is important to measure success through real-time data measurement using a state-level **Monitoring & Evaluation (M&E)** dashboard.

**How to achieve:** The goals of the department would be realized by delivery of enhanced **services**. The services are grouped into types of output, termed as **service domains**. These services comprise of **process** steps which are executed by **stakeholders**. As a part of the **transformation** plan, it is imperative to transform the service through efficient and lean service processes, this change is termed as Business Process Re-engineering. As a critical impact, a **change management** needs to be carried out to ensure the planned transformation is smooth.

**The Enablers:** The above business services would be enabled by **application service** to deliver services, **department applications** and **common applications** facilitated by core platform would enable service delivery. As a part of the transformation plan, it is required to develop new **System** or **Modify** to enable the service delivery.

**Where to store and how to retrieve Information:** The applications facilitate processing of data, these data is designed as per the **Metadata**, that defines the **data entity type**. The State **Digital Registry** would enable identification of service beneficiary. The transformation plan includes a three-fold approach – enhancement of existing **data quality**, efficient **data life-cycle** management and planned **storage** along with efficient **retrieval**

**The infrastructure:** The applications and data would necessarily reside in the **IT infrastructure** in the state data center or cloud. To enable the above business transformation, it is necessary that infrastructure is modernized or **revamped**, and **network** is made available till the last mile

**Building Block:** An **architecture building block** is a package of functionality defined to meet business needs, in simple terms it is the transformation requirement. A **solution building block** is a component within the architecture building that represents a part or complete solution to the requirement

The diagram below illustrated the above explanation in a graphical manner:

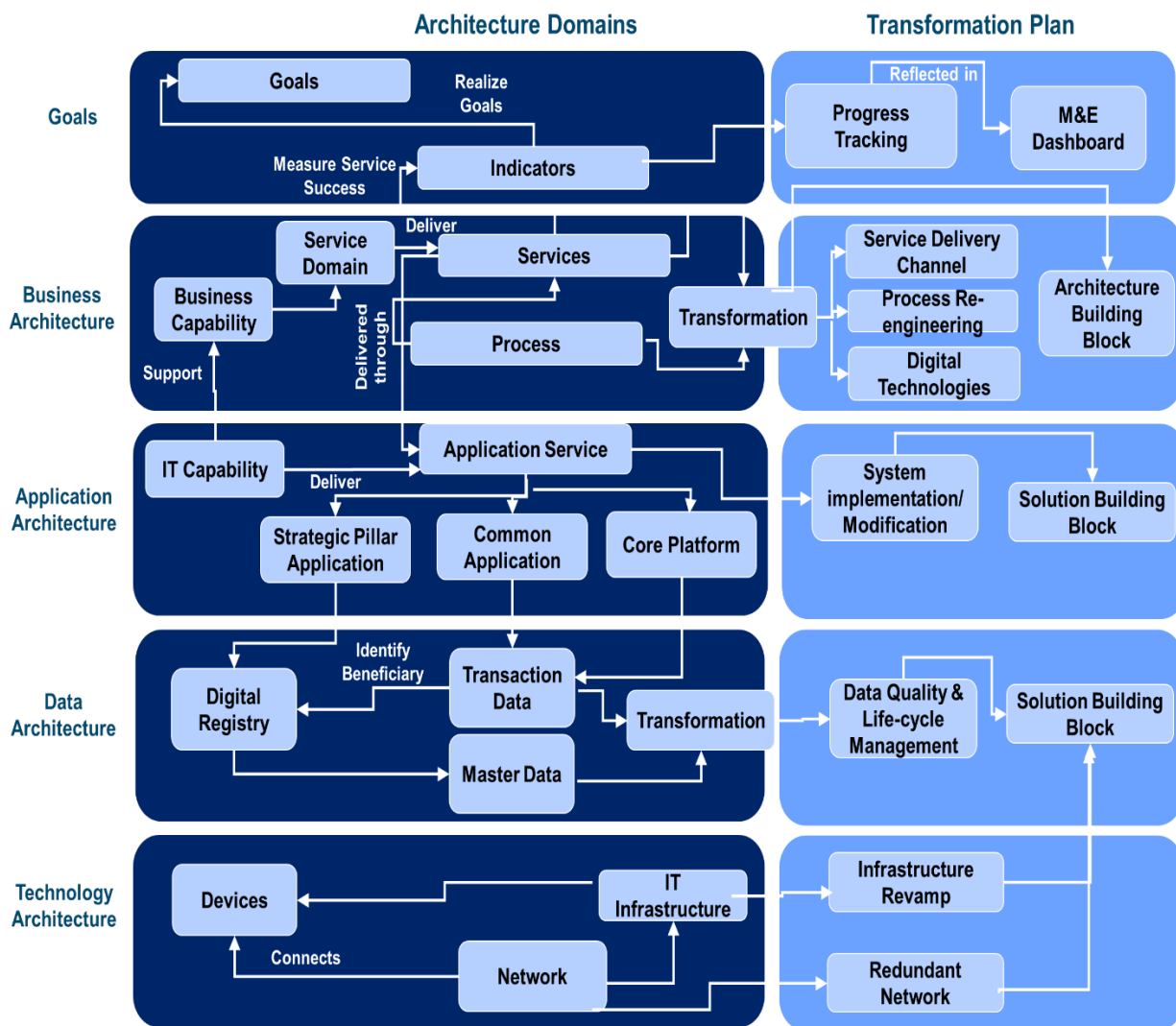


Figure 35: MeghEA Metamodel

The above business content meta model has been explained in below example for Primary Sector:

**Goal:**

Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

**Indicator:**

Increase per capita meat production.

**Business Capability:**

Beneficiary Management, Eligibility Management, Scheme Fund Management, Fund Distribution.

**Service:**

Provide Grant in Aid and Subsidies to Livestock farmers.

**Service Description:**

For peoples participation in production, incentives in the form of Grant in Aid and Subsidies are provided so that production status is enhanced to meet the state demands.

***Service Process:***

The AHVT farmer applies for financial assistance and the request is routed to Department Official for verification of eligibility and necessary checks in the application. The officer will be able to manage schemes and funds for particular schemes. On approval, the request will go to bank for transfer of funds to the applicants bank account.

***IT Capability:***

Online Fund Transfer, Digital modes for Service Application, Workflow Based System.

***Application Service:***

Apply Financial Assistance -> AHVT Department -> Subsidies for Livestock

***Core, Common, Pillar Application:***

State Portal, Scheme Management, Financial Management, Primary Sector Portal, Payment Gateway.

***Digital Registry:***

Farmer ID, Farm ID, Location ID

***Master Data:***

Citizen Database, Local Government Directory Master, Scheme Master

***Devices:***

Mobile Phones, Desktops.

***IT Infrastructure:***

In premise/ Cloud Deployment Server.

***Network:***

Uninterrupted Primary and Secondary network connectivity for officials and Internet for Farmer.