



Agriculture Mission Mode Project (National e-Governance Plan)



Service 4 : Providing Information on Forecasted Weather & Agro-met Advisory

Department of Agriculture & Cooperation
Ministry of Agriculture
Government of India

Software Development Agency
Agricultural Informatics Division
National Informatics Centre (NIC)
Ministry of Communications & Information Technology
Government of India

NeGP-A : AMMP Service – 4

Providing
Information on
Forecasted
Weather & Agro-
met Advisory

1. **Aim**
2. **Objectives**
3. **Implementation Strategy**
4. **System Characteristics**
 - ❖ **As-Is**
 - ❖ **To-Be**
5. **Stakeholders**
6. **Deliverables**

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Providing Information on Forecasted Weather & Agro- met Advisory

To develop, test and operationalise Application Software (Apps) and Portlet, for this Service, using ICT Technology :

- ✓ Providing information (District/ Block level Agro-Ecological Sub-region wise) on a) Forecasted Weather b) Agro-met Advisory
 - Advisory on weather sensitive agricultural operations to mitigate weather based risk on crop cultivation
 - On Variety selection, Field Selection, Sowing time, Crop health
- ✓ State level information with Agro Climatic Regions (15) and National Agricultural Research Project (**NARP**) **nomenclature** of zone (127/133) distributions
- ✓ Advisories like forecast information on soil moisture, date of sowing/ planting, major pest and diseases and health on livestock by disseminating information District Level through KVKs or IMD.
- ✓ Agro-Met Advisory (Maharashtra Model of Customized SMS based advisories to be adopted)
 - Advisory Bulletins to farmers and stakeholders regarding weather sensitive agricultural operations to mitigate weather based risk on crop cultivation
 - Advisories on Forecasted Weather, Variety Selection, Field Selection, Sowing Time, Crop Health and Agro-met Advisory to be provided by experts at the State and National Level

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Providing Information on Forecasted Weather & Agro- met Advisory

- ✓ SMS Alerts on
 - ✓ Weather Forecast
 - ✓ Impact on Crop,
 - ✓ Impact on livestock
 - ✓ Impact on fisheries

- ✓ Study of Existing Automation of Meteorological Bulletin for Disseminating the following
 - ✓ Forecast based on IMD 5 Day Medium Range data
 - ✓ Early Warning System (EWS) on natural calamities
 - ✓ Dissemination over SMS/ e-mail/ Web (G2F & G2C)
 - ✓ Actual Weather Summary based on Daily Weather Data
 - ✓ Dissemination of Agro-Met Advisories

- ✓ Content from Domain Experts at Central/State/ AMFU & KVKs,
 - ✓ with Early Warning System (EWS) on Pest/Disease infestation.
 - ✓ Dissemination over SMS/ e-mail/ Web (G2F)

- ✓ Grievance management through multiple service delivery channels to the farmers

- ✓ Dissemination in vernacular medium

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Providing
Information on
Forecasted
Weather & Agro-
met Advisory

- ✓ Formulation of System Requirements Specifications (SRS);
- Design of solution components;
- Development of Application Software (Apps) of Service;
- Installation, Integration and Testing of Apps;
- Security Audit, Testing and Certification of Apps.
- Pilot Run, User Acceptance, Testing and Stabilization of Apps;
- Documentation of Apps (Software and Services)
- Handholding and Maintenance Support of Apps;
- Capacity Building (through Training) for Operationalisation of Apps;

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Providing
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Weather & Agro-
met Advisory

1. Master Data Management
2. Forecast Weather Summary
3. Information on Agro Met Bulletin
4. Information about historical & Forecasted Weather
5. Alert / SMS on Forecasted Weather and Natural Calamities
6. Grievance Redressal System
7. Expert Advisory System
8. SMS based Crop-Weather alerts
9. Training Schedules
10. Agro meteorological Advisory Services
11. Streaming/Uploading And Streaming of Best Practice Video's

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Providing Information on Forecasted Weather & Agro- met Advisory

- I. Ministry of Earth Science
 - i. Indian Meteorological Department(IMD)
 - ii. National Centre for Medium Range Weather Forecast(NCMRWF)
 - iii. Indian Institute of Tropical Meteorology (IITM)
- II. Indian Council of Agricultural Research(ICAR)
 - i. Central Research Institute for Dry land Agriculture (CRIDA)
 - ii. Krishi Vignan Kendras(KVKs)
- III. Ministry of Agriculture
 - i. Department of Agriculture and Cooperation
 - ii. Crop Weather Watch Group
 - iii. Department of Animal Husbandry Dairying and Fisheries
 - iv. Cooperative Departments
- IV. Department of Space
- V. Central/State Agricultural Universities, Colleges and Research Institutes

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met Advisory

I. State and District Departments

- i. Department of Agriculture
- ii. State Agricultural Management and Extension Training Institutes (SAMETIs)
- iii. State Remote Sensing Application Centre
- iv. ATMA(District Level)
- v. Department of Animal Husbandry and Dairying
- vi. Department of Fisheries
- vii. District Administration
- viii. Revenue Department
- ix. Block /panchayat level Agriculture / Vet./ fisheries Officers
- x. Cooperative Departments
- xi. Media
- xii. PWD, Irrigation, Hydroelectric, Port, telegraphs, Railway and Community

II. Farmer Centric organisations and other Departments

- i. Farmers Training Centres(agriculture, fishermen, livestock)
- ii. Farmers Clubs
- iii. Farmers Field Schools
- iv. NGOs / Self Help Groups
- v. Private Sector Companies

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Weather & Agro-
met Advisory

- **Non Government Organisations**
 - Farmers Training Centres
 - Farmers Clubs and
 - Farmers Field Schools
 - NGOs / Self Help Groups
 - Private Sector Companies
 - Common Service Centres

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Providing
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met Advisory

Service – 4 (1)

Weather forecast summary

AS-IS

1. ARS (Bijapur), UAS (Karnataka), , Online weather Info given by NICRA, under CRIDA,ICAR etc.,NABARD initiative
2. IMD provides only district wise forecast twice a week which may not be sufficient for the farmer. Farmers needs localised weather forecasting and agro-met advisories.
3. Published Documents (Hard Copy / Digitized) of IMD / State Department

To-Be

An Application on Medium Range Weather Forecast comprising of capturing of forecast data published by the IMD, allow for its moderation by IMD local office

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Service – 4 (2)

Service – 4

Providing
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Information on Actual weather summary

AS-IS

- CRIDA and SAU located at Hyderabad having information on Actual weather.
- Also NCMRWF having district wise information on actual weather

To-Be

Actual Weather comprising of capturing actual weather data on different parameters (Temperature min. / max., Wind Speed / direction, Rainfall, Humidity min. / max., Cloud) as sent by the different Agro-Met Stations, converting and incorporating weather historical data (one-time) generating actual weather summary

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Service – 4 (3)

Service – 4

Providing
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Information on Monsoon status

AS-IS

- Information from CRIDA will be used
- Published Documents (Hard Copy / Digitized) of IMD / State Department

To-Be

Weekly / Monthly / Yearly for planning based on South West Monsoon and North East Monsoon

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Service – 4 (4)

Service – 4

Providing
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Weather & Agro-
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Information on Agro Met Bulletin

AS-IS

-- CRIDA's E-Agro Met system will be used
Published Documents (Hard Copy / Digitized) of
IMD / State Department

To-Be

Information on Agro Met Bulletin
comprising of crop staging advisories
filtered/aggregated at any level

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Providing
Information on
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Weather & Agro-
met Advisory

Service – 4 (5)

**Advisory on Crop staging information and Insect/
Pest infestation information related to Agro Met**

AS-IS

-- Information from ICAR , AMFU will be utilized.
Published Documents (Hard Copy / Digitized) of
IMD / State Department

To-Be

Expert Advisory on Crop staging information and Insect/ Pest
infestation information

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met Advisory

Service – 4 (6)

**Advisory on Crop staging information and Insect/
Pest infestation information related to Agro Met**

AS-IS

-- AICRPAM (Info. On crop planning, staging)

To-Be

Providing Information / impact of prevailing weather conditions on different crops by the agricultural officers.

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Information on
Forecasted
Weather & Agro-
met Advisory

Service – 4 (7)

Information on Weather based / seasonal livestock disease

AS-IS

- Information from AMFU (Limited information available)
- Published Documents (Hard Copy / Digitized) of IMD / State Department

To-Be

Providing information on livestock diseases and advisories to take care livestock from various weather based / seasonal conditions.

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Information on
Forecasted
Weather & Agro-
met Advisory

Service – 4 (8)

Crop weather calendars

AS-IS

--- NFSM for Crop Calander & Weekly Weather Watch (WWW) for Area covered, stage of crop
Published Documents (Hard Copy / Digitized) of IMD / State Department

To-Be

Up-to-date crop weather calendars for entire country. That consists crop growth stages, warnings, weather condition, water requirement, phytophases, meteorological conditions, crop pests and diseases, planning, irrigation scheduling and plant protection measures.

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Service – 4 (9)

Agro climatic Atlas of India

AS-IS

--- NFSM have system on Agro climatic Conditions (http://nfsm.gov.in/NfsmMIS/StateProfile/state_agroclimate.aspx)

-- Published Documents (Hard Copy / Digitized) of IMD / State Department

To-Be

An updated version of Agro climatic Atlas is prepared by taking more no. of stations along with inclusion of more no. Of parameters.

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Service – 4 (10)

Soil Moisture Mapping of India

AS-IS

Published Documents (Hard Copy / Digitized) of
IMD / State Department

To-Be

Soil moisture status is an important component of
water balance in a region. Based on short period data series
publication on “Soil Moisture Mapping of India” has been
prepared by the Agrimet Division. Gravimetric observations of
soil moisture (SM) on bare soils from a network of 30 stations
in India

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Service – 4 (11)

MIS Reports

AS-IS

- National Database on Farmers, Weather Summary , Forecast Summary (from Tripura), Crops (DES), Rainfall (IMD), Crop Health (to be discussed)

To-Be

Dynamic MIS reports related to agro-met System.

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met Advisory

Service – 4 (12)

Grievance Management

AS-IS

1. No appreciable Computerised System available
2. Manual process
3. Manual process – paper based

To-Be

- 1) Farmer / citizen should be provided facility to submit their grievances / ground level facts and the public suggestion through IVRS to Government. A System may also be provided for monitoring the grievance lodged and action taken/ solution provided by advisory bodies
- 2) Portal with Work flow system (subject based)
- 3) e-alert

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Providing
Information on
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met Advisory

Service – 4 (13)

Forecast Weather Summary

AS-IS

Weather Summary , Forecast Summary (from Tripura)

To-Be

Medium Range Weather Forecast comprising of capturing of forecast data published by the IMD, allow for its moderation by IMD local office

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Providing
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Service – 4 (14)

Information on Agro Met Bulletin

AS-IS

CRIDA's e-Agromet system.

To-Be

Information on Agro Met Bulletin comprising of crop staging advisories filtered/aggregated at any level

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Providing
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met Advisory

Service – 4 (15)

Information about historical and forecasted rainfall

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Historical data will be used for Trends & predictive analysis to generate advisories/ Alert on Forecasted weather & Agromet advisories.

To-Be

Information about historical and forecasted rainfall

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Providing
Information on
Forecasted
Weather & Agro-
met Advisory

Service – 4 (16)

Alerts on forecasted weather & natural calamities

AS-IS

Published Documents (Hard Copy / Digitized) of IMD / State Department
- Other sources like AMFU, CRIDA, AICRPAM

To-Be

Information on forecasted weather & natural calamities and generation of Alerts

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Providing
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Forecasted
Weather & Agro-
met Advisory

Service – 4 (17)

SMS Based weather & natural calamities alerts

AS-IS

-- Maharashtra model will be adopted

To-Be

SMS Based weather alerts to agricultural / fish
farmers

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Providing
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Weather & Agro-
met Advisory

Service – 4 (18)

SMS Based Crop- weather alerts

AS-IS

-- Maharashtra model will be adopted

To-Be

SMS Based Crop- weather alerts

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Deliverables

- Software Requirement specifications (SRS)
- Software design Document (SDD)
- Development of Software
- Prototype demo on the Proposed Portal
- Migration of existing content
- Basic Content Development and updation of content planned
- Implementation of Portal
- Training to MOA staff for internal use and updation
- Test Plan
- User Manual (On-line)

- Feed Back

- Pilot State : Maharashtra

- **"About 50,000 farmers in ten districts of Maharashtra are expected to benefit from a pilot project which will disseminate weather-related inputs** using Information and Communication Technology (ICT) to improve land productivity and boost crop output.
- It is being launched jointly by the National Bank for Agricultural and Rural Development (NABARD) and [India Meteorological Department](#) (IMD), and is to be financed under the Farmers' Technology Transfer Fund (FTTF).
- The project aims at creating awareness, increasing farmers' knowhow and capacity building for enhanced income through adoption of new technologies, reduction of costs, getting better price for produce and securing technical inputs for crop management, [NABARD](#) spokesman Subodh Abhyankar said.
- In addition to Pune, the other districts to be covered under the scheme, to be launched on September 3, include Ahmednagar, Washim, Bhandara, Amravati, Jalna, Gadchiroli, Sindhudurg and Hingoli.
- "Nearly 50,000 farmers from 500 farmers' clubs promoted by NABARD will be provided weather-related information and crop advisories by way of free SMSes in the pilot initiative," he said.
- The three-year plan envisages using ICT tools for providing need-based agro-meteorological advisory services to ryots in the context of local farming and culture, and ensure a two-way communication between agriculture experts and grassroots level communities, Abhyankar maintained."

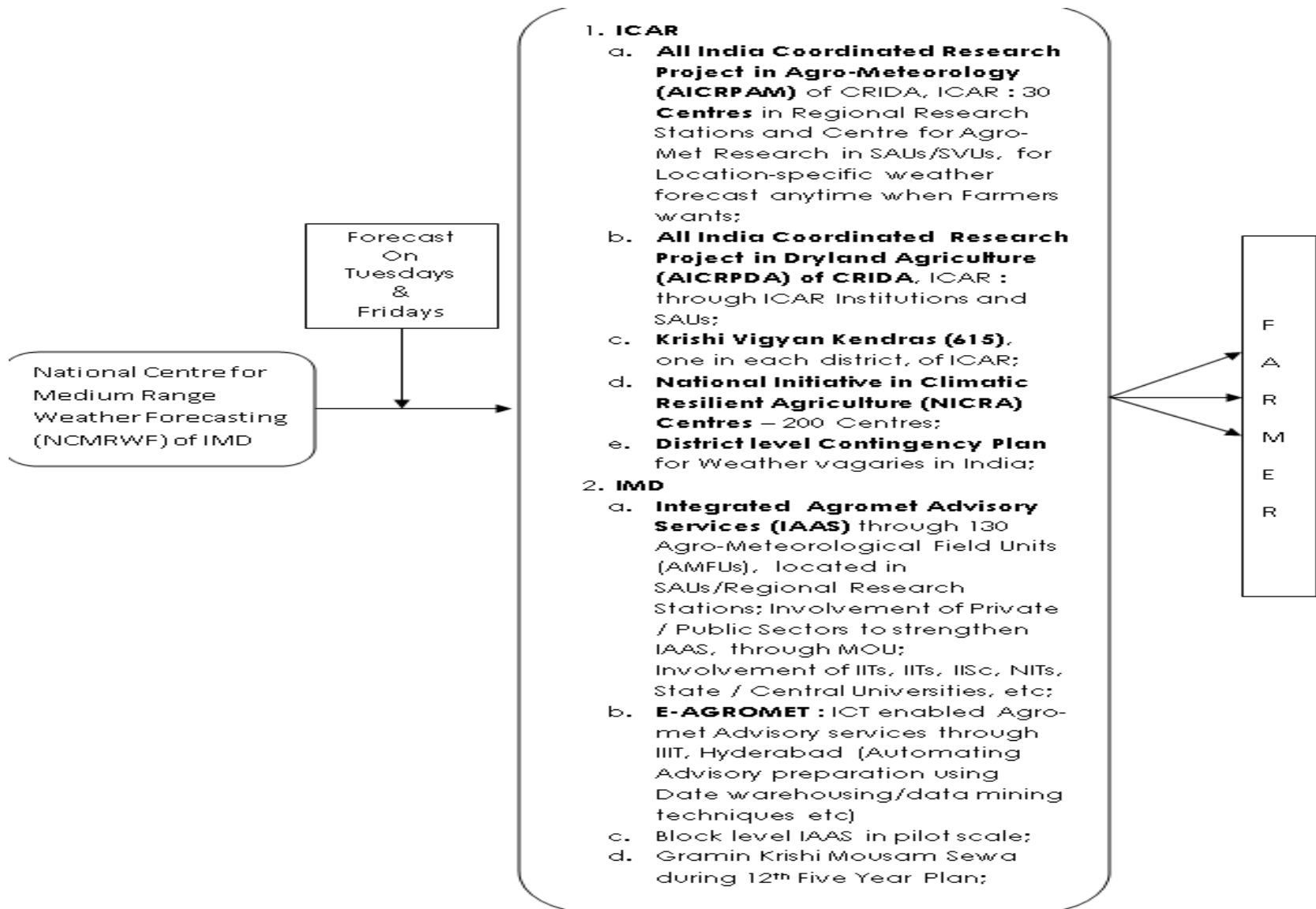
FEEDBACK FROM HARYANA:

- **Proposal for Weather SMS service to the Farmers of Haryana State**

Dr M.L.Khichar Scientist is informed regarding SMS service for the farmers.

- A project entitled “**Dissemination of Weather based Agro-Advisories to the farmers in the state**” has been sanctioned by Department of Agriculture, Govt of Haryana under ATMA Scheme. One of the mandates of the project is to disseminate the weather forecast and its based agro-advisories to the **farmers of the State through free SMS** . Presently the Department has purchased bulk SMSs from the market for disseminating to the farmers on their mobiles in Hindi as well as English language at our own level through Internet. The database of the 40000 farmers has been prepared by the Department and have to be prepared for more than 1 lakh farmers covering whole of the State by the end of this financial year. We came to know that **NIC Tripura Agartalla has been providing such type of the Service in collaboration ICAR Research complex of NEH Region Tripura to the limited farmers** (50 farmers in one time). The Department is interested in a collaborative project with NIC for disseminating the weather SMS service at large scale. Therefore you are requested to provide the web enabled system with NIC Gateway for dissemination of SMSs in Hindi and English language to the farmers on free of cost. This service will help to the farmers in taking real time decision for day to day farm operations. This will also help in increasing the crop production with reducing input cost.
- Please consider the **joint proposal for the interest of the nation.**

• Feedback from Kerala



- **Feedback from Pune:**
- Mr Namboothri, PSA of NIC pune has been exclusively working on IMD, Pune and he has sent a presentation on 'Modernization of Agro Meteorological Advisory Service in India' presented by Shri Prakash Kumar, Joint Secretary, Min. of Earth Sciences

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Providing Information
on Fishery Inputs /
Fisheries Management
(Inland & Marine)

Questions & Answers

Service Project Team :-

- 1.
2. **Shri S. Balasundar, PSA, NIC**
3. **Project Manager/Leader -1**
4. **Senior Programmer /Analyst -1**
5. **Programmer - 3**

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Thank You

