



Agricultural Data Management Framework (ADMF) 2023



Issued By

Agriculture & Cooperation (A&C) Department, Government of Telangana.
Information Technology, Electronics & Communications (ITE&C) Department,
Government of Telangana.



The Objective

...to ensure that agricultural data is managed efficiently for the advancement of the agriculture sector, always protecting the rights of individuals.

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Preamble

The Government of Telangana has been giving a high priority to the development of the agriculture sector in the state, given that 5 million farmers depend on it and that the sector contributes to about 15% of the GSDP.

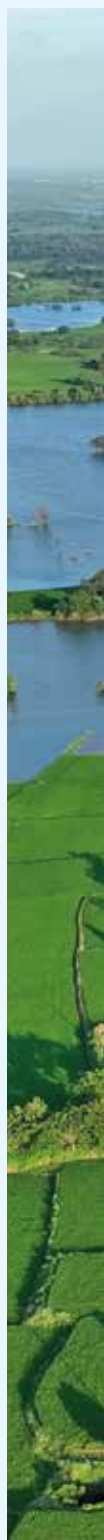
The Government has been adopting a multipronged approach to elevate the status of the agriculture sector through major interventions like a quantum jump in enhancing the irrigation infrastructure, providing input assistance to the farmers, and promoting new varieties. The Government is keen to make a further impact on the levels of production, productivity, and profitability of the farmers by promoting digital agriculture and extensive use of technologies including the emerging technologies like AI, ML, IoT, Drones and satellite imagery. The aim is that the new technologies are deployed in a responsible manner to transform all the segments of the agricultural value chain and bring in significant benefits to the farmers and all other stakeholders of the agriculture ecosystem.

It is well established that data is the most critical resource on which the successful deployments of new technologies depend. It is therefore a necessary initial step to create an environment conducive to the systematic collection, processing, sharing, and usage of agricultural data in ways that support a wide range of use cases in the farm sector. Protection of the rights of farmers and other stakeholders is of paramount importance. In order to ensure protection of digital rights of such stakeholders, adequate data protection measures must be prescribed and personal data must be shared through a consent based framework. In the absence of a holistic environment, organisations in the public and private sectors tend to create data in silos and can find it challenging to share such data with other entities that can potentially produce new value out of innovative solutions using such data. This results in a sub-optimal situation and loss of a huge opportunity promised by the digital economy.

In the light of the above, the Government considers it expedient to streamline the processes, responsibilities, norms, and practices relating to the management of agricultural data for the overall benefit of all the stakeholders, principally the farmers, while also empowering data principals with control over their personal data. The **Telangana Agricultural Data Management Framework 2022** intends to address this need precisely.



The Government is keen to make a further impact on the levels of production, productivity, and profitability of the farmers by promoting digital agriculture and extensive use of technologies





1. Aims And Objects

The objective of the Telangana Agricultural Data Management Framework 2022 is to ensure that agricultural data is managed efficiently for the advancement of the agriculture sector, always protecting the rights of individuals.



2. Applicability

1. This Framework shall be applicable to the following entities and individuals:
 - All the departments and agencies of the Government dealing with agriculture, horticulture, and allied activities specified in the Annexure; and
 - Information Technology and Communications Department of the Government; and
 - All the Agricultural Information Providers (AIPs), Agricultural Information Users (AIUs) and Data Service Providers (DSPs).
2. The Framework shall be applicable to the geographical areas as notified by the Government from time to time.
3. The Government may extend the applicability of the Framework to other departments associated with the agricultural initiatives, to be specified from time to time.
4. This Framework shall be subject to, and superseded by, any provision of laws in effect as notified by the State of Telangana or the central government.



3. Definitions

In this Framework, unless the context otherwise requires:

1. “agricultural data” means such information that is created, collected, processed, shared or used in connection to agricultural business, agricultural production and general agricultural services as listed in the Annexure.
2. “agriculture information provider (AIP)” means a person, business entity or public and private organisation that provides, creates, updates, secures and maintains agricultural data in accordance with this Framework.
3. “agriculture information user (AIU)” means a person, business entity or public and private organisation that receives agricultural data from the AIP under a data sharing agreement with the AIP in accordance with this Framework.
4. “anonymisation”, in relation to personal data, refers to such process(es) of transforming or converting personal data to a form through which a data principal cannot be identified even if the information is combined with other information, after reasonably considering factors such as time, cost and technology.
5. “consent” in relation to personal data shall mean an agreement which is:
 - free, having regard to whether it complies with the standard specified under section 14 of the Indian Contract Act, 1872;
 - informed, having regard to whether the data provided has been provided with the information required as per applicable data protection laws;
 - specific, having regard to whether the data provider can determine the scope of consent in relation to the purpose of processing;
 - clear, having regard to whether it is indicated through an affirmative action that is meaningful in a given context; and
 - capable of being withdrawn, having regard to whether the ease of such withdrawal is comparable to the ease with which consent may be given
6. “data” means and includes a representation of information, facts, concepts, opinions, or instructions in a manner suitable for communication, interpretation, or processing by humans or by automated means.
7. “data management officers (DMO)” means the officer appointed by AIPs, AIUs, and DSPs having specialised knowledge of information technology, computer systems, data science, data protection, database technologies and agriculture domain, who is responsible for monitoring the data-related activities and ensuring that the entities registered under this Framework carry out their functions in accordance with the Framework.
8. “data principal” means the natural person to whom the personal data relates.
9. “data service provider (DSP)” refers to entities, who act on behalf of AIPs and AIUs to carry out the function of enriching, formatting or transforming of datasets or databases so that such enriched, formatted and transformed data can be used for the purposes specified in the Annexure of this Framework.





4. Principles of ADMF

The implementation of this Framework shall be guided by the following principles:

1. Notice and consent framework:

10. "designated authority" is the person designated in the concerned public agency to prescribe processes on sharing non-personal agricultural data.
 11. "Government" means the State Government of Telangana, agencies or officials authorised by the Government to perform functions under this Framework, unless specified otherwise.
 12. "inter-departmental committee (IDC)" means the committee chaired by the Secretary of Agriculture as specified in Clause 5 of this Framework.
 13. "negative data list" means information listed under Section 8 of the Right to Information Act, 2005.
 14. "Non-Personal Data" means data that does not contain personally identifiable information.
 15. "personal data" means data about or relating to a natural person who is directly or indirectly identifiable, having regard to any characteristic, trait, attribute or any other feature of the identity of such natural person, whether online or offline, or any combination of such features with any other information, and shall include any inference drawn from such data for the purpose of profiling.
 16. "Framework" means the Telangana Agriculture Data Management Framework, 2022 and includes its SOPs.
 17. "processing" means an operation or set of operations performed on personal data, and may include operations such as collection, recording, organisation, structuring, storage, adaptation, alteration, retrieval, use, alignment or combination, indexing, disclosure by transmission, dissemination or otherwise making available, restriction, erasure or destruction.
 18. "standard operating procedure" (SOP) refers to any set of instructions, processes, best practices, guidelines, or directions issued by the IDC for the proper implementation of this Framework.
1. **Notice and consent framework:**
 - Data principals must be provided with clear and conspicuous notice prior to collection or processing of personal data for a specific and lawful purpose, and must give their consent for the collection and processing of such personal data.
 - Personal data collected for the particular purpose under clause 4(1)(a) may be used for any other purpose set out in the Annexure only after obtaining the consent of the data principal in respect of personal data for that purpose, in the manner prescribed within this Framework and its SOPs.
 - Subject to (b), data principals must be provided with clear and conspicuous notice prior to, or as soon as reasonably practicable after, sharing of their personal data by the AIP to the AIU in accordance with the Framework.
 - The privacy notice referred to in clauses 4(1)(a) and (c) shall contain the following information:
 - (i) the purpose or purposes for which the personal data is to be processed;
 - (ii) the identity and contact details of the data principal collecting the personal data;
 - (iii) the right of the data principal to withdraw her/his consent, and the procedure for such withdrawal in an accessible manner;
 - (iv) the individuals or entities along with their contact details, including other data providers or data consumer with whom personal data may be shared, if available; and

- (v) the period of time for which the personal data shall be retained, or where the period of retention is not known, then the criteria for determining such period.
 - The privacy notice in Clause 4(1)(e) shall be provided in English or Telugu, as per the choice of the data principal.
- 2. Purpose based limitation for processing agricultural data containing personal data** Processing of personal data under this Framework shall be carried out only for the purposes provided by the Framework, as specified in the notice issued under sub-clause (1). Use of the data for any additional purposes within the Annexure must be consented to by a data principal and must be proportional and necessary for the performance of the functions of the AIP or the AIU in accordance with this Framework.
- 3. Fair and lawful processing of personal data** The collection and processing of personal data must be fair, lawful and limited to that which is necessary for the purposes specified in the Annexure.
- 4. Responsibility and accountability in processing agricultural data** Every AIP, AIU and DSP acting under this Framework must designate a DMO to carry out their functions in accordance with the terms of this Framework and its accompanying SOPs.
- 5. Ease of access with responsible sharing** Agricultural data shall be accessible to the AIUs in an easy and convenient manner to accelerate the development of innovative technology solutions and their deployment to benefit the stakeholders. However, this ease of access shall at all times be in accordance with the data protection and privacy principles specified in this Framework.
- 6. Rights of data principals**
- a) The data principal shall be provided access to their personal data and informed of the history of its uses and sharing with AIUs, if so requested by the data principal.
 - b) Data principal shall be able to seek completion, updating, correction or amendment of the personal data if the same is not accurate or complete.
 - c) Data principals shall have the right to request deletion of their personal data which is no longer necessary for the purposes for which it was processed, or by withdrawing their consent, or if the personal data has been processed contrary to the provisions of this Framework. In the event that an AIP has shared the personal data with any AIU prior to this request for erasure, the AIP shall:
 - (i) undertake best efforts to notify such AIUs to delete the personal information of the data principal; and
 - (ii) share the details of AIUs having access to such personal data to the concerned data principal for the data principal to request deletion from such AIUs directly.
 - d) Upon being given notice regarding sharing of personal data by the AIP to third parties, data principals shall have the right to restrict such sharing of personal data. The AIP shall enable this process in an accessible manner as stated in its privacy notice.
 - e) Subject to technical feasibility and protection of AIP's trade secrets, the data principal shall be entitled to receive personal data pertaining to them in a structured, commonly used and accessible format and have this personal data transferred to another AIP covered by the Framework.
 - f) If the relevant AIP or AIU under this Framework receives any request from the data principal for exercising the data principal's rights under Clause 4(6) and does not carry out the request, it must provide the data principal its reasons for rejecting the request in writing within 30 days.
- 7. Technological and operational safeguards for data security and privacy** All entities dealing with agricultural data shall establish technological and operational safeguards for data security and privacy including adoption of standard industry best practices on the use of privacy-protecting technologies, or as prescribed by this Framework and its SOPs.



5. Inter-Departmental Committee

1. The IDC shall be chaired by the Secretary, Agriculture and shall comprise officials representing the following departments:
 - a) Irrigation & CAD Department;
 - b) Planning Department;
 - c) Agriculture and Cooperation Department;
 - d) Revenue Department;
 - e) Telangana State Remote Application Centre; and
 - f) Information Technology and Communications Department.
2. In addition to the departments listed in Clause 5(1), the IDC may invite officials from any other department or agency of the Government dealing with agricultural, horticultural and allied activities, industry representatives, experts and civil society organisations, to participate in specific meetings when so required.
3. The Chairperson shall preside over the meetings of the IDC and have powers of general superintendence and directions in the conduct of the affairs of the IDC.
4. The IDC shall formulate its own procedure for the transaction of business at its meetings, including quorum at such meetings.
5. If for any reason the Chairperson is unable to attend a meeting of the IDC it shall be presided over by a Vice Chairperson nominated by him.
6. The IDC shall meet periodically, as it deems necessary, with a minimum of one meeting per quarter of the year.

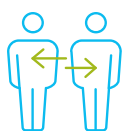


6. Functions Of The IDC

The functions of the IDC include:

- Prescribing lightweight reporting formats and requirements to ensure compliance, with a special focus on the obligations to report breaches.
- Issuing guidelines on the qualifications, method of appointment, role and responsibilities of DMOs for government departments.
- Issuing appropriate procedures to qualify and/or empanel DSPs, and the terms of engagement of DSPs by the departments and agencies.
- Issuing general technical guidelines on the methods recommended for sharing various classes and types of data and developing a model data sharing agreement for sharing data with AIUs.
- Notifying minimum safeguards, technical standards and data formats, to ensure appropriate data quality to be usable for prescribed purposes.
- Notifying appropriate technical specifications and processes to be adopted for anonymization and de-identification of personal data, occurring by itself or in combination with non-personal data.
- Developing policies, business processes and resources for enabling interoperability .
- Developing Key Performance Indicators (KPIs) to monitor and evaluate implementation of the framework.
- Coordinating with other agencies and departments of the Government for the smooth functioning of the digital infrastructure, data standards and protocols established by the Government under this framework.
- Updating and amending SOPs when it so deems suitable.

The Government may add or modify the functions of the IDC under this clause from time to time to meet the objectives of this Framework.



7. Sharing of Agricultural Data

1. The following conditions shall apply to AIPs, AIUs and DSPs in respect of sharing agricultural data under this Framework:
 - a) Agricultural data may be collected, shared, or processed strictly in accordance with this Framework and the SOPs issued by the IDC under Clause 8 of this Framework.
 - b) Data of the types specified in the negative data list shall not be shared.
2. The Government may facilitate the establishment of digital infrastructure, data standards and protocols for sharing of agricultural data under this Framework.
3. With reference to clause 7(2) above, the Government may determine procedures for registration of AIPs and AIUs to use such digital infrastructure.
4. AIPs shall share agricultural data with AIUs through a data sharing agreement.



8. SOPs For Agencies Managing Agricultural Data

The IDC, in consultation with the departments to which this Framework applies, shall issue the SOPs for managing agricultural data by the entities to which this Framework applies. Such SOPs shall include appropriate procedures, guidelines, formats, checklists, and templates in relation to the following aspects of managing agricultural data.

1. Institutional Arrangement for Data Management

- a) Every department and agency of the government to which this Framework applies shall designate a DMO responsible for monitoring the data-related activities of the department or agency and providing guidance to all the functionaries in its purview managing agricultural data.
- b) The IDC shall issue guidelines on the role and responsibilities of the DMOs and the qualifications, method of appointment and functions of the technical consultants appointed by various departments and agencies of the Government.
- c) The IDC shall also issue guidelines on the process flow and authorisations needed for sharing of agricultural data within the departments to which this Framework is applicable.
- d) Such guidelines may include, but not be limited to, a model data sharing agreement for sharing and accessing the specified agricultural data to be signed by the AIP on the one part and any AIU or DSP seeking to use that dataset on the other part.

2. Data Service Providers

- a) The IDC may issue appropriate procedures to qualify and/or empanel DSPs, and the terms of engagement of DSPs by the departments and agencies.
- b) The DSPs shall perform functions including collating, cleaning, annotating, ensuring machine readability and any other functions deemed necessary to transform raw data into usable datasets.

3. Technical methods for sharing of data

- a) The IDC may issue general guidelines and tech-

nical frameworks that may be adopted for sharing of agricultural data as specified in Clause 7.

- b) The technical frameworks may include, but are not limited to, digital platforms that facilitate the sharing and accessing of agricultural data.
- c) Such guidelines shall be reviewed and updated once every six months.

4. Quality of datasets

- a) The integrity and quality of datasets need to be ensured to derive potential or intended value.
- b) The data should be accurate, free from errors, correctable, verifiable and reliable.
- c) AIPs and DSPs should ensure that data adheres to a specified set of standards/protocols to ensure usability and interoperability.
- d) The IDC shall notify minimum safeguards and technical standards to ensure appropriate quality of data such that it is usable for the prescribed purposes.

5. De-identification and anonymization

- a) Personal data must be de-identified or anonymized to protect the privacy of the data principal.
- b) De-identification or anonymization shall be carried out by the relevant AIP, AIU or DSP as per the specifications and processes notified under this SOP when the agricultural data record in question consists of either solely personal data, or a combination of per-

sonal and non-personal data.

- c) The IDC shall notify appropriate technical specifications and processes to be adopted for anonymization and de-identification of personal data, occurring by itself or in combination with non-personal data.

6. Compliance requirements

- a) All the entities and individuals to whom this Framework applies shall take reasonable steps to ensure full compliance with the requirements of this Framework.
- b) The IDC shall prescribe lightweight reporting formats and requirements to ensure compliance, with a special focus on the obligations to report breaches.

7. Capacity building

- a) The IDC, in coordination with the ITE&C department of the Government, shall issue an SOP for capacity building to ensure better data governance across the departments to which this framework applies.
- b) To further capacity building, the SOP may include conducting seminars, workshops, training and upskilling programs for officials in the concerned departments and agencies.





9. Grievance Redressal

1. Every AIP and AIU under this Framework should designate a senior functionary as a grievance redressal officer, who has not already been designated as a DMO.
2. A person aggrieved by processing of agricultural data under this Framework should make a complaint in the format specified to the grievance redressal officer so designated by the entity or government department or agency.
3. The grievance redressal officer may ask the complainant or the AIP or AIU for further information that is relevant to the resolution of the complaint.
4. The grievance redressal officer should resolve the complaint within 30 working days of receipt of such complaint.
5. On due consideration of the complaint, the grievance redressal officer may direct the entity or government department or agency:
 - (a) to stop processing the data in question in a manner that is in violation of the Framework; and
 - (b) to delete the data processed in violation of the Framework.
6. If the complainant is not satisfied with the action taken by the grievance redressal officer or if 30 working days have passed without the grievance redressal officer initiating action on the complaint, the complainant may file an appeal with an appellate panel constituted by the IDC.
7. The contact details of the offices or officers designated for grievance management shall be widely publicised.



10. Appellate Panel

1. The IDC shall appoint a three-member appellate panel for considering the appeals arising from the decision of the grievance redressal officers, with at least one member qualified in law.
2. The appellate panel may require the complainant or the AIP or AIU to provide further information that is relevant to the resolution of the complaint.
3. The appellate panel should give concerned parties a fair and reasonable opportunity of being heard.
4. The appellate panel should dispose of the appeal within 30 days of its filing with the appellate panel.
5. On due consideration of the complaint, the appellate panel may direct the entity or government department or agency:
 - (a) to stop processing the data in question in a manner that is in violation of the Framework;
 - (b) to delete the data processed in violation of the Framework and recommend, depending on the gravity of misconduct, that the IDC consider barring the erring AIP or AIU from carrying out activities within the scope of the Framework.
6. The qualification of members of the appellate panel, quorum of the appellate panel and the procedure to be followed in the discharge of its functions shall be specified by the IDC.

Annexure: Classification of purpose of processing agricultural data containing personal data

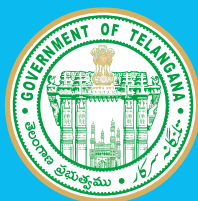
(Please see clause 3(1) and clause 4(1)(b) of the Framework)

Classification of purpose of processing agricultural data containing personal data

Code	Types of Agricultural Data	Description of the purpose of collection/ processing of personal data
Agriculture Business Purposes		
B1	Agricultural credit	<ul style="list-style-type: none"> Assessment of credit worthiness and extension of short, medium, and long-term loans to farmers and the associated processes like recovery. Extending credit to farmers basing on Negotiable Warehouse Receipts (NWR)
B2	Insurance	<ul style="list-style-type: none"> Providing crop insurance cover and disbursing of the amount assured on meeting the defined criteria. Providing insurance cover for farm machinery
B3	Logistics	<ul style="list-style-type: none"> Providing logistics services to the farmers for transportation of inputs and farm produce
B4	Storage-related services	<ul style="list-style-type: none"> Providing storage facilities – normal and cold- to the farmer during the post-harvest period
B5	Market-related services	<ul style="list-style-type: none"> Enabling the producers to access the markets – physical or digital – for selling of their produce. Providing personalised services relating to the sale of the produce, including hyper-local market intelligence.
B6	Payment services	<ul style="list-style-type: none"> Enabling electronic payments and receipts arising out of the transactions relating the purposes specified in this standard.
Agriculture Production Purposes		
P1	Farm advisories	<ul style="list-style-type: none"> The entire range of personalised advisory services required for enhancing the production, productivity, and profitability of the farmer, including those relating to weather, inputs and good agricultural practices (GAP) Digital extension services
P2	Pest and disease management	<ul style="list-style-type: none"> Prediction of pest and disease and provision of advisories on appropriate precautionary measures. Services relating to controlling pests and diseases on their actual incidence.
P3	Water management	<ul style="list-style-type: none"> Services and advisories relating to irrigation practices, including micro-irrigation and distress irrigation
P4	Quality assurance	<ul style="list-style-type: none"> Providing quality assaying and assurance services on the inputs and farm produce Providing traceability services for farm produce to the traders and end consumers
P5	Soil Health	<ul style="list-style-type: none"> Issuing Soil Health Cards (SHCs) to the farmers, in physical and electronic forms Monitoring soil health through field observations and remote sensing methods

Code	Types of Agricultural Data	Description of the purpose of collection/ processing of personal data
General Agricultural Services		
G1	Benefits	<ul style="list-style-type: none"> • Providing benefits to the farmer, in cash or kind by the central government, state governments and NGOs
G2	Land Records	<ul style="list-style-type: none"> • Maintenance of land records and record of rights on land • Creation and maintenance of cadastral records specifying the field boundaries of agricultural parcels, digital form including geo-referencing, using GIS and GPS
G3	Research	<ul style="list-style-type: none"> • Agricultural research including applied research requiring experimentation and demonstration at the field level
G4	Innovation	<ul style="list-style-type: none"> • Sample data in anonymized or de-identified conditions required for testing innovative solutions, including those involving emerging technologies like AI, ML, IoT.
G5	Education	<ul style="list-style-type: none"> • Data required for agricultural education
G6	Data Principal use	<ul style="list-style-type: none"> • Data required for use of the data principal for monitoring and decision-making at various stages of the agriculture cycle.





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