SHIV NADAR FOUNDATION

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INTER-INSTITUTION

COLLABORATION GRANTS

Title - A predictive model designed to forecast the annual cotton yield by leveraging satellite imagery and CGI data

SAMPLE PROPOSAL

UNDERTAKING FORM

Grant Title: [Title of the Grant Proposal]

Collaborating SNF Institutions:

We, [Name of Principal Investigator 1], representing <SNF Institution 1> and [Name of Principal Investigator 2], representing <SNF Institution 2>, hereby acknowledge our joint collaboration in the submission of this grant proposal.

Principal Investigator (PI) Nomination for Communication:

In the spirit of effective communication and coordination, we nominate the following individual as the Principal Investigator (PI) responsible for primary communication on behalf of both institutions:

Primary PI Nominee:

Name: [Full Name of the Principal Investigator]

Position: [Position Title]

Email: [Email Address]

Phone: [Phone Number]

Institution Name: [SNF Institution Name]

Undertaking:

1. **Communication Responsibility:** The nominated Principal Investigator shall be responsible for all official communications related to the grant proposal, including but not limited to correspondence with the funding, updates, and reporting.

2. **Collaborative Decision-Making:** Both SNF Institutions commit to collaborative decision-making throughout the project duration. Major decisions, changes, or concerns will be discussed and agreed upon jointly, taking into consideration the best interests of the project and its objectives.

3. **Regular Updates:** The nominated Principal Investigator will provide regular updates to both institutions including the project review that shall take place every 6 months to assess progress and resolve any challenges, ensuring transparency and inclusivity in the decision-making process. Updates will be shared through agreed-upon communication channels.

4. **Amendment of PI Nominee:** In the event of unforeseen circumstances that require the amendment of the nominated Principal Investigator, Principal Investigator of other Institution will by default act as Primary Investigator for communication. Meanwhile, the Principal Investigator of other institution can be finalized mutually by both institutions timely and formalize the changes.

Signatures:

[Authorized Signature- Principal Investigator 1]

[SNF Institution 1]

Date: _____

[Authorized Signature- Principal Investigator 2]

[SNF Institution 2]

Date: _____

SAMPLE PROPOSAL FOR
SNF COLLABORATION GRANTS

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Disclosure: Kindly note that below proposal provided is only to demonstrate the format and needs to be used only for reference. It is up to the team's discretion, how they would want to describe their information within the prescribed format & word-limit.

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Topic- "Cotton Harvest Forecast Model"

Title - A predictive model designed to forecast the annual cotton yield by leveraging satellite imagery and CGI data

1. Problem Statement (200 words)

The cotton industry faces challenges in accurately predicting yearly harvests, hindering effective planning and resource allocation. Existing methods lack precision, leading to inefficiencies and economic losses. A solution is needed to enhance cotton harvest forecasting, ensuring a reliable and data-driven approach.

2. Background Story (500 words)

Cotton, a vital global commodity, sustains numerous industries and livelihoods. However, unpredictable factors such as weather patterns, pests, and diseases contribute to the variability in yearly harvests. Traditional forecasting methods rely heavily on historical data and lack the real-time insights crucial for dynamic agricultural conditions.

Our proposal aims to revolutionize cotton harvest forecasting by integrating satellite imagery and CGI data. Satellite technology offers a comprehensive view of crop health, moisture levels, and growth patterns. Combined with CGI data, which provides insights into soil quality and composition, this approach presents an unprecedented opportunity to create a robust forecasting model.

This initiative stems from the realization that leveraging cutting-edge technology can significantly enhance the accuracy of predictions, empowering cotton producers to make informed decisions. The proposed forecasting model aims to serve as a reliable tool for stakeholders across the cotton supply chain, fostering sustainability and economic resilience.

3. Approach and Methodology (500 words)

***It's essential to define objectives to be undertaken in the project and methodology adopted for achieving those objectives.*

Objectives:

1. Measurable Objective: Enhance Data Integration and Synchronization

Methodology:

Effective data integration is crucial for accurate predictions. Develop algorithms that seamlessly integrate satellite imagery and CGI data, ensuring spatial and temporal alignment. Implement synchronization processes to harmonize the data, addressing any discrepancies. Conduct rigorous testing to validate the harmonization and iteratively refine the integration methodology based on feedback. Continuous improvement strategies will optimize the cohesion of the dataset, enhancing the reliability of the predictive model.

2. Measurable Objective: Optimize Model for Resource-Efficient Processing

Methodology:

Efficient resource utilization is vital for scalability. Evaluate the computational resources required for model training and prediction, identifying potential bottlenecks. Implement model compression techniques to reduce the model size while maintaining performance, ensuring efficient processing. Explore cloud computing solutions for scalability, allowing the model to handle large datasets efficiently. Conduct performance testing under various resource constraints and refine the model architecture to ensure optimal resource efficiency. This methodology ensures that the predictive model remains both accurate and scalable.

3. Measurable Objective: Facilitate Stakeholder Understanding and Adoption

Methodology:

Stakeholder engagement is critical for the model's real-world impact. Develop user-friendly interfaces and visualization tools to present model outputs in an easily understandable format for stakeholders. Organize workshops and training sessions to familiarize stakeholders with the model, its applications, and interpretation of results. Collect feedback from stakeholders to identify areas of improvement in communication and understanding. Iteratively refine communication strategies based on stakeholder interactions and needs, ensuring clarity and facilitating successful adoption. This methodology places emphasis on user-centric design and continuous improvement to align the model with stakeholder expectations.

Thereby to fulfil above objectives, our approach will involve:

a. **Data Integration:** Utilizing advanced machine learning algorithms, we will integrate satellite images and CGI data to develop a comprehensive dataset. This dataset will capture critical parameters influencing cotton growth, including weather conditions, soil quality, and pest prevalence.

b. **Machine Learning Model:** Employing state-of-the-art machine learning techniques, we will develop a predictive model trained on historical data. The model will continuously learn and adapt, incorporating real-time information from satellite imagery and CGI data to improve accuracy over time.

4. Expected Outcome **(200 words)**

The implementation of this forecasting model is expected to yield a highly accurate prediction of yearly cotton harvests. This precision will enable farmers, traders, and other stakeholders to plan effectively, reducing the impact of uncertainties on the cotton supply chain. The model's adaptability ensures its relevance in varying climatic and agricultural conditions, contributing to sustainable cotton production.

---- Briefly explain the Overall Expected Outcome to be achieved in this section & mention detailed plan in the Bluebook document in line with the sample Bluebook document available on the website -----

5. Fund Utilization Plan

---------- Please submit detailed Fund Utilization Plan as mentioned in the attached Bluebook document along with this proposal ----------

In case of a major cost in personnel or equipment, an appropriate explanation should be provided in detail

6. Collaborating Institution's Role **(200 words)**

SNF Institution 1 will play a pivotal role in this project by providing expertise in satellite technology, access to proprietary CGI data, and on-ground support for field testing. Their experience in agricultural research and technology integration will ensure the success of this initiative.

Additionally, SNF Institution 2 will actively participate in disseminating knowledge and findings to the wider agricultural community.

Please find the contact details of the team that would be working on the project-

---------- Briefly mention each Collaborating Institution Role at project level while you explain more details of each Institution Role yearly in the Bluebook document in line with the sample Bluebook document available on the website ----------

SNF Institution 1

S.No.	Name	Email ID	Phone No.	Role
1	Member 1			Principal Investigator
2	Member 2			Member
3	Member 3			Member
4	Member 4			External Consultant
5				
6				

SNF Institution 2

S.No.	Name	Email ID	Phone No.	Role
1	Member 1			Principal Investigator
2	Member 2			Member
3	Member 3			Member
4	Member 4			External Consultant
5				
6				

***Depending on the number of institutes collaborating the list can be updated accordingly.*

7. Timelines **(200 words)**

The project is anticipated to span 24 months:

From	To	Activities
Apr 2025	Sept 2025	Data acquisition, collaboration initiation, and platform development
Oct 2025	Mar 2026	Model development and initial testing
Apr 2026	Sept 2026	On-field trials and model refinement and Stakeholder training
Oct 2025	Mar 2027	Dissemination of results, final adjustments based on feedback

This timeline ensures a comprehensive and well-tested forecasting model ready for implementation within the stipulated period.

Briefly mention the Key Activities to be completed in every 6 months from the start of the project here as a 6-month review cycle would be followed for Winning Proposals while detailed plan is outlined in the Bluebook process

***In case any supporting documents or guiding material needs to be added depending on the project, it can be added as Annexure in the proposal.*

In conclusion, this grant proposal seeks support for an innovative approach to cotton harvest forecasting, addressing a critical need in the industry. The successful implementation of this project promises far-reaching benefits, enhancing sustainability and resilience in the cotton supply chain.

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