बिहार सरकार
गन्ना उद्योग विभाग

पत्रांक–02/रेगु०–02–7036/2025– 287/ईका पटना, दिनांक– 05-फरवरी, 2026

प्रेषक,

अनिल कुमार झा, भा0प्र0से0
ईखायुक्त, बिहार, पटना।

सेवा में,

महालेखाकार,
बिहार, पटना।

द्वारा– **आंतरिक वित्तीय सलाहकार।**

विषय : **माननीय वित्त मंत्री के द्वारा बजट सत्र 2025–26 में की गयी घोषणा के आलोक में गुड़ के लिए "Centre of Excellence" की ईख अनुसंधान संस्थान, पूसा, समस्तीपुर में स्थापना हेतु कुल मो० 569.65 लाख (पाँच करोड़ उनहत्तर लाख पैंसठ हजार) रूपये की योजना क्रियान्वयन की स्वीकृति तथा इसके अन्तर्गत वित्तीय वर्ष 2025–26 (प्रथम वर्ष) के लिए राज्य योजना के तहत कुल 1,31,95,000/–(एक करोड़ इकतीस लाख पनचानवे हजार) रूपये की निकासी एवं व्यय की स्वीकृति।**

आदेश: **स्वीकृत।**

महाशय,

उपर्युक्त विषयक बजट सत्र 2025–26 में माननीय वित्त मंत्री द्वारा की गई घोषणा एवं इस संबंध में वित्त विभाग, बिहार के पत्रांक–202/वि० दिनांक–13.03.2025 के अनुपालन में ईख अनुसंधान संस्थान, पूसा, समस्तीपुर में गुड़ के लिए "Centre of Excellence" की स्थापना हेतु डॉ० राजेन्द्र प्रसाद केन्द्रीय विश्वविद्यालय, पूसा, समस्तीपुर द्वारा अनावर्ती एवं आवर्ती मद में पाँच वर्षो के लिए कुल मो० 569.65 लाख (पाँच करोड़ उनहत्तर लाख पैंसठ हजार) रूपये का DPR समर्पित किया गया है।

समर्पित DPR को स्वीकृत करते हुए गुड़ के लिए "Centre of Excellence" की ईख अनुसंधान संस्थान, पूसा, समस्तीपुर में स्थापना हेतु कुल मो० 569.65 लाख (पाँच करोड़ उनहत्तर लाख पैंसठ हजार) रूपये की योजना क्रियान्वयन की स्वीकृति तथा इसके अन्तर्गत वित्तीय वर्ष 2025–26 (प्रथम वर्ष) के लिए राज्य योजना के तहत कुल 1,31,95,000/–(एक करोड़ इकतीस लाख पनचानवे हजार) रूपये की निकासी एवं व्यय की स्वीकृति दी जाती है।

2. इस योजना अंतर्गत स्वीकृत अवयवों का भौतिक एवं वित्तीय लक्ष्य निम्नवत् है–

क्र0सं0	कार्य अवयव	सामान्य जाति	
		भौतिक लक्ष्य (संख्या में)	वित्तीय लक्ष्य (लाख रू0 में)
1	2	3	4
1	**विषय शीर्ष– 31 06 सहायक अनुदान–गैर वेतन**		
1.1	ईख अनुसंधान संस्थान, पूसा, समस्तीपुर में गुड़ के लिए "Centre of Excellence" की स्थापना	01	131.95
	योग–		**131.95**

3. योजना अंतर्गत स्वीकृत राशि की निकासी विशेष कार्य पदाधिकारी–सह–निकासी एवं व्ययन पदाधिकारी, गन्ना उद्योग विभाग द्वारा सचिवालय कोषागार, विकास भवन, पटना से की जायेगी तथा ईख अनुसंधान संस्थान, पूसा (समस्तीपुर)/डॉ० राजेन्द्र प्रसाद केन्द्रीय विश्वविद्यालय, पूसा, समस्तीपुर को उनके द्वारा समर्पित पूर्व प्राप्ति रसीद के आलोक में Comptroller, Dr. RPCAU, Pusa को उनके बैंक Punjab National Bank, शाखा– RAU, Pusa, Samastupur, Bihar, खाता संख्या– **4512002100000922**, IFSC Code No.–**PUNB0451200** में CFMS के माध्यम से सीधे अन्तरण द्वारा भुगतान सुनिश्चित किया जायेगा।

4. इस योजनांतर्गत प्रथम वर्ष के लिए स्वीकृत कुल 131.95 लाख (एक करोड़ इकतीस लाख पनचानवें हजार) रूपये वित्तीय वर्ष 2025–26 में राज्य योजनान्तर्गत बजट प्रावधान के तहत निम्न शीर्ष से विकलनीय होगा–

क्रम संख्या	बजट शीर्ष	विषय शीर्ष	निकासी हेतु स्वीकृत राशि/ विकलनीय राशि (लाख रू0)
1.	<u>सामान्य वर्ग–</u> मुख्य शीर्ष 2852–उद्योग–उप मुख्य शीर्ष–08–उपभोक्ता उद्योग– लघु शीर्ष–201– चीनी मांग संख्या–45 उप शीर्ष–0104–गुड़ विकास कार्यक्रम, विपत्र कोड– 45 – 2852082010104	3106 सहायक अनुदान– गैर वेतन	131.95
	योग–		**131.95**

5. योजना का कार्यान्वयन ईख अनुसंधान संस्थान, पूसा, समस्तीपुर/डॉ० राजेन्द्र प्रसाद केन्द्रीय विश्वविद्यालय, पूसा, समस्तीपुर के द्वारा डी.पी.आर. के अनुरूप किया जायेगा। स्वीकृत डी.पी.आर. की प्रति संलग्न है।

6. ईख अनुसंधान संस्थान, पूसा, समस्तीपुर द्वारा योजना कार्य का प्रगति प्रतिवेदन एवं व्यय की गयी राशि का विस्तृत विवरण के साथ उपयोगिता प्रमाण पत्र विभाग को समर्पित किया जायेगा।

7. वित्त विभाग के पत्रांक–2561 (वि0)2 दिनांक–17.04.1998 का अनुपालन निकासी एवं व्ययन पदाधिकारी द्वारा सुनिश्चित किया जायेगा।

8. योजना प्रस्ताव पर विभागीय स्थायी वित्त समिति की दिनांक–05.01.2026 को आयोजित बैठक में स्वीकृति प्राप्त है।

9. राज्यादेश प्रारूप एवं प्रस्ताव पर माननीय मंत्री, गन्ना उद्योग विभाग, बिहार, पटना का अनुमोदन संचिका सं0– 02/रेगु०–02–7036/2025 के पृष्ठ सं0–36/टि0 पर दिनांक–02.02.2026 को प्राप्त है।

10. राज्यादेश प्रारूप में आंतरिक वित्तीय सलाहकार की सहमति संचिका सं0– 02/रेगु०–02–7036/2025 के पृष्ठ सं0–34/टि0 पर दिनांक–22.01.2026 को प्राप्त है।

11. वित्त विभाग के पत्रांक 7355 दिनांक 05.10.2007 के आलोक में महालेखाकार से प्राधिकार पत्र की आवश्यकता नहीं है।

<u>अनुलग्नक–यथोक्तः</u>

विश्वासभाजन

ईखायुक्त, बिहार।

ज्ञाप संख्या–02/रेगु०–02–7011/2024 287/ई०का० पटना, दिनांक– 05 फरवरी, 2026

प्रतिलिपि– कोषागार पदाधिकारी, सचिवालय कोषागार, विकास भवन, पटना/वित्त विभाग (बजट शाखा), बिहार, पटना/निदेशक, ईख अनुसंधान संस्थान, पूसा, समस्तीपुर को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।

ईखायुक्त, बिहार।

ज्ञाप संख्या–02/रेगु०–02–7011/2024 287/ई०का० पटना, दिनांक– 05 फरवरी, 2026

प्रतिलिपि– विशेष कार्य पदाधिकारी–सह–निकासी एवं व्ययन पदाधिकारी, गन्ना उद्योग विभाग, बिहार, पटना/बजट शाखा/लेखा शाखा, गन्ना उद्योग विभाग, बिहार, पटना को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।

ईखायुक्त, बिहार।

ज्ञाप संख्या–02/रेगु०–02–7011/2024 287/ई०का० पटना, दिनांक– 05 फरवरी, 2026

प्रतिलिपि– माननीय मंत्री, गन्ना उद्योग विभाग, बिहार, पटना के आप्त सचिव/अपर मुख्य सचिव, गन्ना उद्योग विभाग, बिहार, पटना के प्रधान आप्त सचिव/ईखायुक्त, बिहार के निजी सहायक को सूचनार्थ प्रेषित।

ईखायुक्त, बिहार।

ज्ञाप संख्या–02/रेगु०–02–7011/2024 287/ई०का० पटना, दिनांक– 05 फरवरी, 2026

प्रतिलिपि–आई॰ टी॰ प्रबन्धक, गन्ना उद्योग विभाग, बिहार, पटना को वेबसाईट पर अपलोड करने हेतु सूचनार्थ प्रेषित।

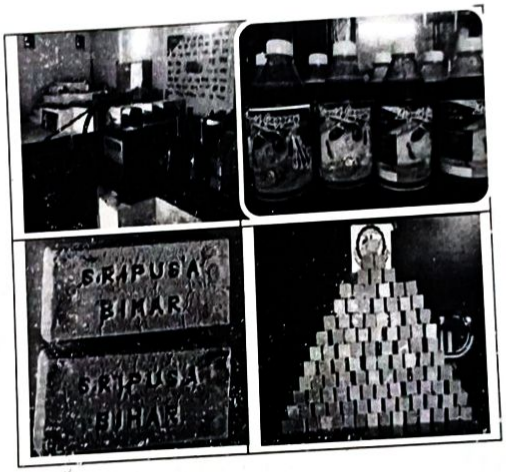
ईखायुक्त, बिहार।

DPR

On

CENTRE OF EXCELLENCE ON JAGGERY PROCESSING AND VALUE ADDITION

Submitted to
Sugarcane Industries Department
Government of Bihar



DR. RAJENDRA PRASAD CENTRAL AGRICULTURAL UNIVERSITY
PUSA, SAMASTIPUR (BIHAR) – 848125

PROJECT AT A GLANCE

1.	**Title of Proposal**	:	**CENTRE OF EXCELLENCE ON JAGGERY PROCESSING AND VALUE ADDITION**
2.	**Name of the Institution**	:	Sugarcane Research Institute Dr Rajendra Prasad Central Agricultural University Pusa (Samastipur) – 848125
3.	**Name & address of the Head of the Institute**	:	**Dr. P.S. Pandey** **Vice - Chancellor** Dr. Rajendra Prasad Central Agricultural University, Pusa (Samastipur) – 848125. Contacts : 91-6274-240226 (Phone)/ 240255 (Fax) Email : vc@rpcau.ac.in
4.	**Name and address of the Project Director**	:	**Dr. Devendra Singh** Director, Sugarcane Research Institute, Dr. Rajendra Prasad Central Agricultural University, Pusa (Samastipur) – 848125 Email: director.sri@rpcau.ac.in
5.	**Name of Principal Investigator**	:	**Er. Anupam Amitabh** Assistant Professor, Sugarcane Research Institute, Dr. Rajendra Prasad Central Agricultural University, Pusa (Samastipur) – 848125 Email: anupam@rpcau.ac.in
6.	**Duration**	:	**Five years**
7.	**Budget Requirement**	:	**Grand Total (A+B) = Rs. 569.65 Lakhs (Five crore sixty nine lakh sixty five thousand rupees only)**

1. Background information

In view of changing market scenario, consumers' preferences and global competitions, new income-generating opportunities need to be created through crop and product diversification in sugarcane **'Produce to Product Chain'.** In present scenario the Bihar Agriculture as a whole is undergoing several transformative changes. Growing population, changing lifestyles, expanding urbanization and accelerating climate changes are creating new challenges for Bihar agricultural research and development. Sugarcane occupies an important position in agrarian economy of Bihar. Bihar is an agriculture dominating state and its economy mainly depends on agriculture. About 77% of the population primarily engaged in Agriculture which contributes about 35% to the state domestic product. The area under sugarcane during 2024-25 is around 2.40 lakh hectares which produced 130.4 lakh tonnes of cane with an average productivity of 54.41 tonnes/hectare (Directorate of sugarcane development, Govt. of India)

The rising demand for sweeteners has brought focus on jaggery, an important cottage industry in economies such as Bihar for their implications on employment and income. According to India's Ministry of Commerce and Industry, more than 70% of the world's jaggery comes from India, where people refer to it as "medicinal sugar." Jaggery is rich in calcium, phosphorus and iron. Because having high vitamin C, vitamin A and other minerals, it can act as a vehicle to fight iron and vitamin deficiency. In contrast, sugar is only source of energy (398.0 Kcal) with sucrose content of 99.5%, without any additional contribution of vitamins and minerals.

The traditional jaggery production process is labor-intensive and inefficient. Many units use outdated equipment, resulting in lower quality products, contamination, and lower shelf-life. In addition, there is a lack of innovation in the development of value-added products, such as jaggery syrup, powder, and medicinal jaggery. Due to these inefficiencies, jaggery producers are unable to fully capitalize on the growing global demand for natural sweeteners. Jaggery as a cottage industry in Bihar now needs to be given more emphasis to meet the local and global quality parameters. In this regard, jaggery sector assumes importance for providing the "agriculture-industry" linkage by not only absorbing surplus labor from agriculture, but also spiraling economic activity to boost rural incomes. Centre of excellence having an incubation center will provide a suitable environment for the entrepreneurs. Incubation is the institution that assists budding entrepreneurs in developing their business and solving problems associated with

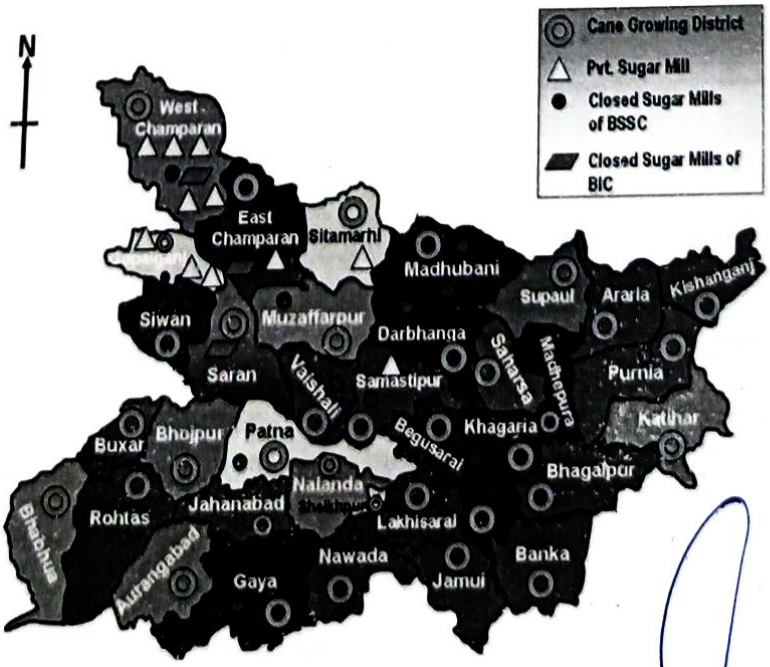
it, especially in the initial stages, by providing an array of business and technical services, lab facilities, advisory, network, and linkages. This center will be offering skill training programs as well as full incubation support on jaggery processing and value addition.

Therefore, by establishing a Centre of Excellence on jaggery processing and value addition will provide a platform for research, innovation, and training, addressing these challenges and enhancing the overall competitiveness of the sector

2. Rationale

Sugarcane is grown in an area of 23236.79 ha in 15 non-mill districts of Bihar *viz.* *Madhubani, Saharsha, Madhepura, Banka, Dharbhanga, Jamui, Purnea, Begusarai, Bhagalpur, Vaishali, Nawada, Lakhisarai, Munger, Gaya and Saharsha.* The canes produced in these areas are not utilized for manufacturing of sugar but largely for the manufacture of jaggery. Traditional methods of jaggery making have become non profitable business due to the production of low quality jaggery which fetches low prices. More so, this cottage industry remained neglected due to cane crushing inefficiency, juice clarification, inefficiencies in heating and open pan boiling system, meager financial and policy support to jaggery units, lack of technological intervention in juice extraction, open pan furnace inefficiency, jaggery moulding and packaging, quality control and hygiene issues, lack of skill , non-adoption of R&D interventions due to paucity of infrastructure, development fund, improper jaggery market and extension support.

CANE MAP OF BIHAR



With the introduction of FSSAI (Food Safety and Standards Authority of India) and ISO standards which includes the food safety and HACCP (Hazard Analysis and Critical Control Points), have put the food and feed products under stringent quality assurance checks. Every unit operation, right from harvesting to packaging and storage of jaggery production system, therefore, needs modernization. This will not only uplift this cottage industry but also act as a step ahead in the direction of making self-reliant, generating employment for village youths and ensuring the economic and nutritional security of farmers in particular and nation as whole.

In this regards, SRI, Pusa is continuously working in the areas of Jaggery processing and value addition. This institute has also developed many technologies of sugarcane cultivation, promising varieties of sugarcane and different value added jaggery products. In last year around 125 entrepreneurs/ farmers got acquainted with the modern techniques of jaggery processing and value addition under Bihar State jaggery industries promotion programme of Sugarcane Industries department, Govt. of Bihar. Different types of value added jaggery products, liquid jaggery, sugarcane juice vinegar etc are being produced at this unit. ***RTU (Ready –To-Use)* vegetative clarificants**- Institute is continuously working in field of providing a best technology for good quality organically processed jaggery.

The Centre of Excellence will address these challenges by introducing modern technologies, providing training to farmers, and focusing on quality improvement and product diversification. The center will become a leading research and development hub for jaggery-related technologies, ensuring that producers can meet global standards while enhancing their economic viability.

3. Objectives

Goal: The main goal is to establish a Centre of Excellence dedicated to the processing of jaggery and its value addition. The Centre of Excellence will serve as a hub for research, training, and innovation, aimed at improving the quality, quantity, and profitability of jaggery production.

Specific Objectives:

a) **Modernize Processing Techniques:** To introduce high-efficiency, low-energy machinery and automated technologies for the juice extraction, filtration, evaporation, and processing of jaggery.

b) **Enhance Product Quality and Shelf-Life:** To implement standardized quality control measures and new packaging techniques to improve the shelf-life of sugarcane juice and jaggery products.

c) **Promote Value-Added Products:** To develop innovative jaggery-based products such as jaggery syrup, powder, jaggery-based health supplements, and ready-to-products.

d) **Capacity Building and Knowledge Dissemination:** To train farmers, small-scale processors, and entrepreneurs in modern processing, quality control, and product development.

e) **Foster Industry Collaboration:** To create partnerships with research institutions, agricultural universities, government bodies, and NGOs to promote sustainable practices and innovations in the jaggery sector.

4. Scope of the Project

Geographical Scope	Technical Scope	Training and Education Scope
The Centre of Excellence will serve jaggery producers across Bihar, particularly in major sugarcane-growing areas as well as in non-mill districts of Bihar. Additionally, it will explore export opportunities to neighboring states where jaggery is in demand	**Machineries for jaggery processing:** Establishment of automatic jaggery processing plant along with some secondary processing equipments for value addition. **Processing Technologies:** The Centre of Excellence will implement cutting-edge technology for juice preservation, modern automatic machineries for jaggery processing. This also includes using solar-powered systems, automated jaggery molding machines, and low-cost technologies. **Product Development:** The Centre of Excellence will focus on producing value-added products, such as	• Certificate courses for students/ entrepreneurs. • Workshops and certification programs for farmers, processors and entrepreneurs. • Technical support for upgrading existing units and processing facilities. • Awareness campaigns about the benefits of modern techniques and sustainable production.

	organic jaggery powder, jaggery syrup, jaggery-based candies, and sweets. Special attention will be given to developing healthier variants, such as jaggery with medicinal herbs	

5. Components of the project

5.1. Upgradation of jaggery unit:

- Establishment of fully equipped research, production facility and incubation centre for trainees.
- Set up of laboratories for quality control, R&D, and testing of new products.
- To build a demonstration unit for processing and value addition of jaggery.

5.2 Screening of Suitable Sugarcane Varieties for quality Jaggery production

Activities	Expected Outcomes
✓ Screening of suitable sugarcane varieties known for high sucrose content and adaptability. ✓ Field Trials: Trials to evaluate performance, focusing on traits such as sugar yield, disease resistance, and environmental adaptability. ✓ Quality Assessment: Analyse the jaggery produced from different varieties for taste, color, and chemical composition (sucrose, moisture content and impurities) and shelf life.	➢ Comprehensive data on the performance of various sugarcane varieties, leading to the selection of optimal varieties for jaggery production. ➢ Development of best practices for cultivation and harvesting that align with the identified varieties. ➢ Segregating the suitable varieties suitable for solid jaggery, liquid jaggery, jaggery powder, for vinegar etc. and other value-added products.

5.3 Research & Development (R&D): Research on the latest innovations in jaggery processing, quality control, and the creation of new value-added products.

Activities	Expected Outcomes
✓ Research and Development: Innovate methods for juice preservation, jaggery processing and processing, focusing on energy-efficient boiling and filtering techniques. ✓ Equipment Design: Develop prototypes of low-cost machinery for extraction, boiling, and packaging, emphasizing sustainability (e.g., solar-powered or electric operated automatic equipment). ✓ Pilot Testing: Implement pilot projects to validate the effectiveness of developed technologies.	➢ A suite of low-cost technologies and machinery that improve production efficiency and product quality. ➢ Increased adoption of modern techniques by traditional jaggery producers, resulting in higher yields and better market quality.

5.4 Entrepreneurship Development:

Activities	Expected Outcomes
✓ Training Programs: Conduct regular workshops and training sessions on jaggery production techniques, business management, and marketing strategies for aspiring entrepreneurs. FSSAI licensing etc. ✓ Incubation Support: Establish an incubation center within the Centre of Excellence to provide mentorship, access to resources, and business planning support. ✓ Networking Opportunities: Facilitate networking events that connect entrepreneurs with investors, suppliers, and markets to foster collaboration and growth.	➢ A new generation of entrepreneurs equipped with skills and knowledge to innovate and compete in the jaggery market. ➢ Enhanced market access for small producers through cooperative models and shared resources

5.5 Model farm for sugarcane cultivation:

The model farm for sugarcane cultivation is designed as a demonstration site to educate and inspire sugarcane trainees, entrepreneurs, and farmers. It features an automated drip irrigation system that delivers precise amounts of water directly to the root zone, optimizing water use efficiency and boosting crop yields. The farm incorporates modern practices such as the use of high-yielding and disease-resistant sugarcane varieties, mechanized planting and harvesting, soil health management with organic amendments, and integrated pest and nutrient management strategies. By showcasing these advanced techniques and technologies, the model farm serves as a live learning platform, helping stakeholders adopt sustainable, profitable, and scientifically backed methods of sugarcane cultivation.

6. Monitorable Targets

Sl. No.	Component / Activity	Monitorable Targets (5 Years)
1	**Establishment of Centre of Excellence**	• Complete infrastructure setup including R&D labs, processing unit, incubation center within Year 1 Q1. • Fully operational demonstration unit by Year 2 Q2.
2	**Upgradation of Jaggery Unit**	• Install modern jaggery processing machinery (automatic juice extractors, filtration, evaporation units) by Year 2 Q2. Develop and pilot 5 secondary value-addition processes (powder, syrup, candies, health products) by Year 3 Q2.
3	**Screening of Suitable Sugarcane Varieties**	• - Conduct field trials of at least 10 varieties across 2 cropping seasons. - Select 3–5 optimal varieties for different jaggery products by Year 3 Q1. - Develop best practices manual for sugarcane varieties suited to jaggery by Year 3 Q2.
4	**Research & Development (R&D)**	• Innovate methods for juice preservation, jaggery processing and processing, focusing on energy-efficient boiling and filtering techniques.
5	**Quality Enhancement and Shelf-Life Improvement**	• - Develop and standardize quality protocols (moisture %, impurity %, microbial testing) by Year 2 Q3. - Introduce improved packaging solutions extending jaggery shelf life by Year 3 Q2. - Certify processors under FSSAI and other applicable standards by Year 5.
6	**Training, Capacity Building & Technical Support**	• - Train 500 farmers, processors, students, and entrepreneurs annually. - 2-3workshops per year. - Launch 2 Certificate/Diploma courses by Year 3. - Provide technical handholding for upgrading 25 traditional jaggery units by Year 5.
7	**Entrepreneurship Development**	• - Incubate and support 20 jaggery entrepreneurs through the incubation center. - Facilitate at least 10 startup linkages with funding bodies, investors, and markets. - Organize 5 entrepreneurship summits by Year 5.
8	**Model Farm for Sugarcane Cultivation**	• - Set up fully operational model farm (automated drip irrigation, mechanized practices) by Year 2 Q2. - Conduct 4 field days and farmer interaction programs annually. - Demonstrate high-yielding, disease-resistant sugarcane varieties to stakeholders annually.
9	**Market Linkages and**	• - Establish market connections with 10 major domestic

Sl. No.	Component / Activity	Monitorable Targets (5 Years)
	Export Promotion	buyers and at least 2 international buyers. - Facilitate branding and collective marketing for jaggery products by Year 4. - Launch promotional campaigns highlighting Bihar jaggery.
10	**Awareness, Outreach, and Impact Monitoring**	• - Publish quarterly newsletters and technical bulletins. - Conduct 1 national seminar/workshop annually. - Perform quarterly progress monitoring and final impact evaluation by Year 5.

7. Physical Achievements

S.no	Activity	1st year	2nd year	3rd year	4th year	5th year
1.	• Implementation of field trials for selected sugarcane varieties: Identifying and preparing sites for trials; Monitoring growth and yield of different varieties under various conditions; Collection of data on the suitability of practices for quality jaggery production.					
2.	• Site selection and Establishment of 5 TCD automatic jaggery processing plant.					
	• Development of low-cost technologies for jaggery production, value addition; shelf life enhancement etc.					
	• Up-gradation/Renovation of jaggery quality analysis laboratory. Procurement of laboratory equipment for juice analysis and jaggery quality analysis.					
	• Up-gradation/Renovation of Incubation centre including training hall, exhibition room including Storage, and other utilities (Video conferencing room with all accessories, Audio-visual aids, smart podium, Digital Camera, furniture, AC, inverters, batteries etc.)					
	• Installation of drip irrigation system					
3.	• Capacity building: Training programme on varietal scheduling with proper package practices for sugarcane production suited for jaggery processing; Hands on training on jaggery production and value addition.					
	• Launching entrepreneurship training programs.					

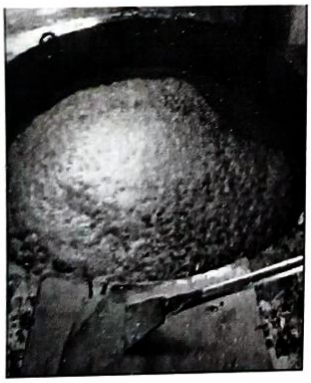
- **Location:** The Centre of Excellence will be strategically located at Dr. Rajendra Prasad Central Agricultural University, Pusa to facilitate easy access to raw materials and to reach local farmers and entrepreneurs effectively.
- **Partnerships:** Collaboration with agricultural department, government agencies, and NGOs focused on rural development to leverage expertise and resources.

Process Flow Diagram:

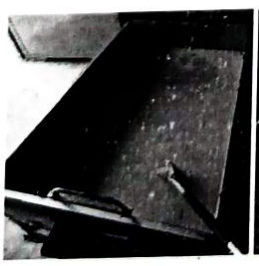
Cane Production

Harvesting and Detrashing

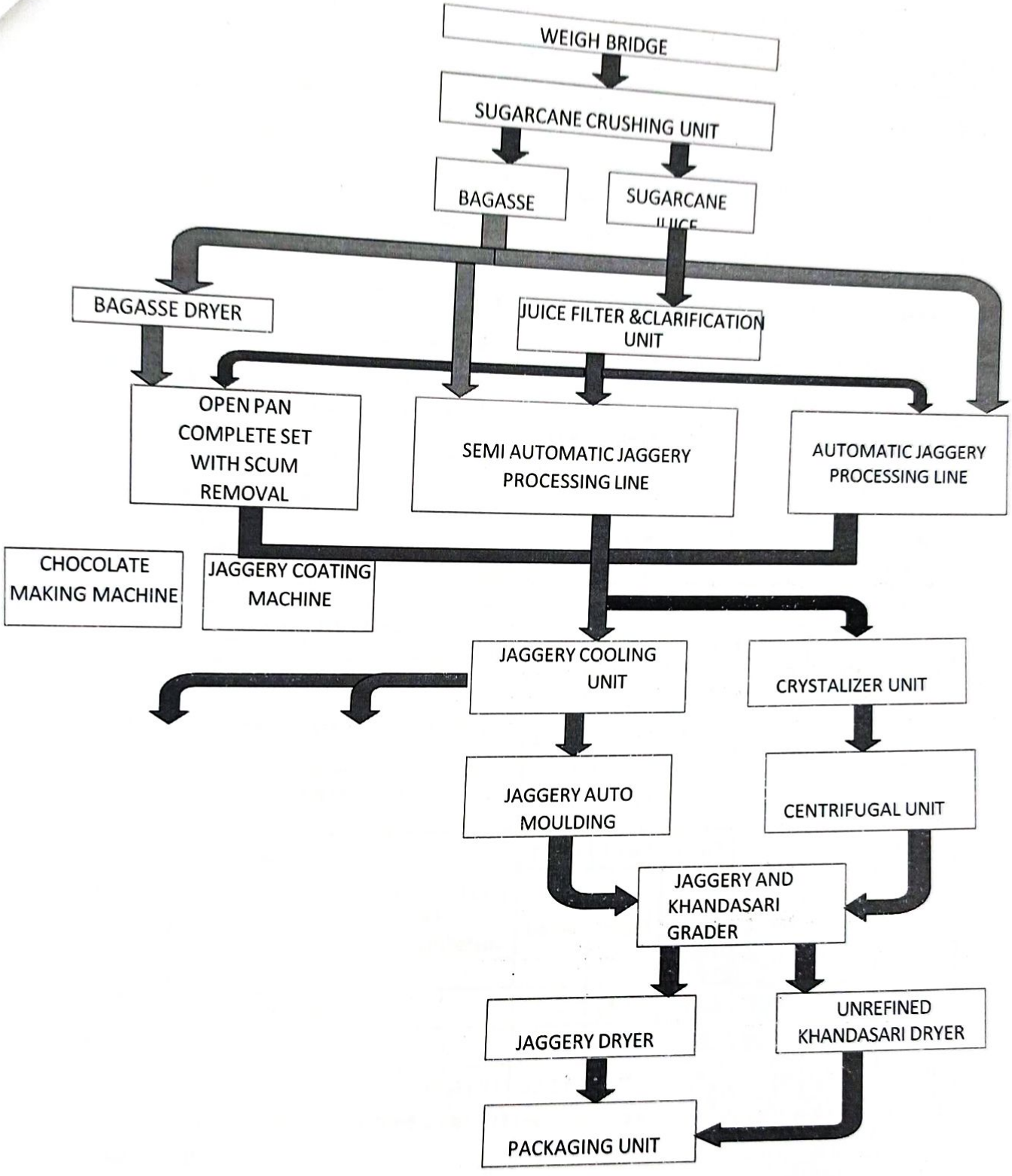
Crushing and Filtration



Concentration in open pan using vegetative clarificants



Transfer to cooling pan for mixing and cooling Cubical moulding of jaggery



Flowchart of Jaggery Manufacturing Plant under CoE

8. Budget Details:

S.N	Particulars	2025-26	2026-27	2027-28	2028-29	2029-30	Total (in lakhs)
(A)	**Non-Recurring expenditure**						
1.	Centre of Excellence on Jaggery Processing and Value-addition:-						
	A) Establishment of 5 TCD fully automatic Jaggery plant **Annexure I**	**111.95**					**111.95**
	B) Up-gradation/Renovation of jaggery quality analysis laboratory. Procurement of laboratory equipment for **juice analysis** and jaggery quality analysis. **Annexure II**		**56.60**				**56.60**
	C) Up-gradation/Renovation of **Incubation centre** including training hall, exhibition room including Storage, and other utilities (Video conferencing room with all accessories, Audio-visual aids, smart podium, Digital Camera, furniture, AC, inverters, batteries etc.)	**20.00**	**80.00**				**100.00**
2.	Development of model farm for sugarcane cultivation **Annexure III**		**25.00**				**25.00**
	Total (A)	**131.95**	**161.60**				**293.55**

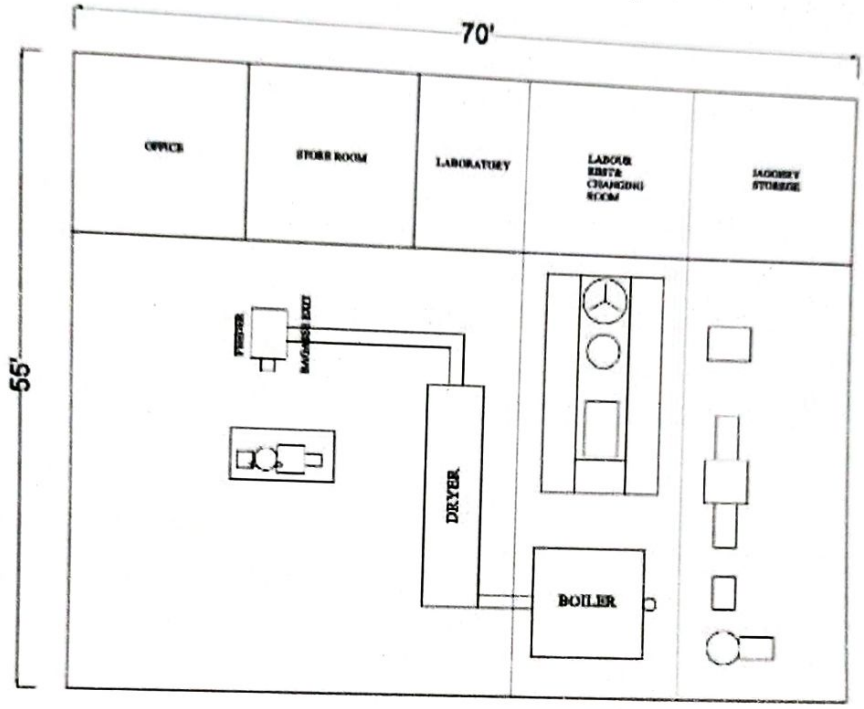
(B)	**Recurring expenditure**						
1.	Young Professional (Total -03) Fixed 32000 per month	11.52	11.52	11.52	11.52	11.52	57.60
2.	Skill Manpower (Total - 03) @ 515 per day	05.57	05.57	05.57	05.57	05.57	27.85
3.	Semi Skill Manpower (Total 03) @ 475 per day	05.13	05.13	05.13	05.13	05.13	25.65
4.	Capacity building	10.00	10.00	10.00	10.00	10.00	50.00
5.	Entrepreneurs, farmers training /Seminar/Brainstorming/Work shop/Kisan Gosthi / Gur Mahotsav etc.	05.00	05.00	05.00	05.00	05.00	25.00
6.	Operational Contingency	05.00	05.00	10.00	10.00	10.00	40.00
7.	PoL, Hiring and Miscellaneous	10.00	10.00	10.00	10.00	10.00	50.00
	Total (B)	**52.22**	**52.22**	**57.22**	**57.22**	**57.22**	**276.1**

Grand Total (A+B) = Rs. 569.65 Lakhs (Five crore sixty nine lakh sixty five thousand rupees only)

9. Expected Outcomes:

The establishment of a **Centre of Excellence on Jaggery Processing and Value Addition** will significantly enhance the efficiency, quality, and profitability of jaggery production, benefiting farmers, processors, and entrepreneurs. The Centre of Excellence will introduce modern processing technologies, such as automated extraction, energy-efficient evaporation, and quality control systems, while promoting the development of value-added products like jaggery syrup, powder, and medicinal variants. It will provide training, capacity building, and research to improve product quality and expand market access, both domestically and internationally. Furthermore, the Centre of Excellence will foster sustainable practices through energy-efficient systems, water conservation, and eco-friendly packaging, while also contributing to rural economic development and job creation. By integrating technological innovation, environmental sustainability, and industry collaboration, the Centre of Excellence will transform the jaggery sector, empowering local communities and contributing to the growth of the organic and natural sweetener market.

Layout of 5 TCD Automatic Jaggery Plant



BUDGET DETAILS:

1)	5 TCD – FULLY AUTOMATIC JAGGERY PLANT	Rs. 81,95,100.00
2)	TRANSPORTATION, LOADING & INSURANCE	
3)	INSTALLATION CHARGES, TRIAL	
4)	SHED CONSTRUCTION	Rs 30,00,000.00

TOTAL AMOUNT – Rs 1,11,95,100.00

Amount in words: Rupees one crore eleven lakh Ninety Five Thousand & One Hundred Only.

List of equipments for Sugarcane juice Analysis Lab **Annexure -II**

	Name of equipments	Quantity	Approx. Amount (Rs in lakh)
1.	Digital refract meter	2	0.25
2.	Air condition for Equipment lab	2	1.10
3.	Autoclave	1	1.50
4.	Incubator shaker	1	1.00
5.	Centrifuge (of different capacity)/ multipurpose	2	1.00
6.	Deep-Freezer	2	1.50
7.	Digital Burette, Micro-pipette	-	1.25
8.	Hot air Oven	1	0.70
9.	Automatic digestion and distillation Unit for protein (Kjedahl)	1	3.00
10.	Automatic Fiber estimation system	1	4.00
11.	Magnetic stirrer with Hot plate	1	0.50
12.	pH meter	4	0.20
13.	Refrigerator	1	0.40
14.	Spectrophotometer (UV)	1	4.00
15.	Vortex mixer	1	0.20
16.	Water bath	1	0.50
17.	Moisture analyzer	1	1.50
18.	Water Activity Analyzer	1	2.50
19.	Laminar flow	1	1.00
20.	Colony counter	1	0.50
21.	Atomic Absorption Spectrophotometry	1	20.00
22.	Civil work inside the lab; Furniture; Safety equipment/protection: work table etc.,)	-	10.00
		Total cost	**56.60**

(Rupees fifty six lakh sixty thousand only)

Annexure -III

DRIP IRRIGATION SYSTEM

PROJECT AREA : 01 hectare
CROP : SUGARCANE
WATER SOURCE: BORWELL
SPECING: 1.2 mtr X 0.4mtr/4LPH

DRIP IRRIGATION SYSTEMS					
Sr.	**Item Description**	**Qty**	**Unit**	**U.Rate, Rs.**	**Amount, Rs.**
A	Filter Unit				
1	DIS/SIS J-S-FLOW FIL 40M³ 75MM ECO	1	Nos	2,826.50	2,826.50
2	DIS/SIS JAIN DRIPLINE WINDER	1	Nos	2,424.00	2,424.00
3	J-GHOOMAR SAND SEP.40M3/HR75MM P	1	Nos	6,325.00	6,325.00
4	DIS/SIS 60 LTR FERTIGATION EQUIPMENT-PL	1	Nos	5,750.00	5,750.00
5	DIS/SIS VENTURI MANI PLASTIC 75MMX32MM	1	Nos	1,949.50	1,949.50
6	VENTURY ASSEMBLY COMPLETE 32MM (1)	1	Nos	1,624.50	1,624.50
				Sub Total - A	**20,899.50**
B	*Main / Submain Pipes*				
7	SKT PVCPIPE 090 MM X 04 KG	24	M	241.00	5,784.00
8	SKT PVCPIPE 075 MM X 04 KG	66	M	148.00	9,768.00
9	SKT PVCPIPE 063 MM X 04 KG	382	M	101.00	38,582.00
				Sub Total - B	**54134.00**
C	*Laterals and emitters*				
10	TUBE OD16MM CL2X100 MTR	400	M	12.70	5,080.00
11	AQUA 16MM 4 LPH 40CM CL2 400MTR NPC	8400	M	12.30	1,03,320.00
12	POLY GROMMET TO16X13MM	400	Nos	4.63	1,852.00
13	LATERAL END STOP "8" SHAPE 16 MM	400	Nos	2.29	916.00
14	EMITTING PIPE JOINER 16X16 OD	400	Nos	3.28	1,312.00
				Sub Total - C	**1,12,480.00**
D	*Valves and Accessories*				
15	DIS/SIS PVC NON RETURN VALVE 75 MM	1	Nos	598.50	598.50
16	AUTOMATIC AIR CUM VACCUM RELEASE VAL32MM	1	Nos	290.50	290.50
17	ARV ASSY W/O AIR VALVE 32MMX75MM	1	Nos	156.00	156.00
18	DIS/SIS CTRL VALV 63 MM MOULDEDSEALPLAIN	4	Nos	536.00	2,144.00
19	CONTROL VALVE 75 MM MOULDED SEAL PLAIN	1	Nos	815.00	815.00
20	FLUSH VALVE 63 MM	4	Nos	73.00	292.00
				Sub Total - D	**4,296.00**
				TOTAL (A+B+C+D)	**1,91,809.50**
E	FITTINGS AND ACCESSORIES	5.00%			9590.48
	GST	12.00%			23017.14
		TOTAL COST (INC. GST 12%)			**2,24,417.12**

AUTOMATION SYSTEM :					
SR. No.	Description ot Items	Qty	Unit	Rate Rs.	Amount Rs.
	Irrigation Controller System				
1	Advance Irrigation Controller	1	Nos	398000.00	398000.00
	Automated Fertigation&Sensor				
2	Jain Nutricare Medium Flow 3+1 Venturi	1	Nos	400633.00	400633.00
3	Dis/Sis Rsu Type Tensiometer 30 Cm	5	Nos	35508.00	177540.00
	Field Valves & Water Meter Etc				
4	Solenoid Valve Pla 75mm(2.5) Assembled	5	Nos	7163.00	35815.00
5	Dis/Sis Fm Thr Adpt 75mm(21/2) Hd	10	Nos	50.65	506.50
6	Wtr Mtr Turbo Ir With Reed 75mm	1	Nos	12525.00	12525.00
7	Disc Clean Filter 1"	4	Nos	837.50	3350.00
	Electrical Fittings & Accessories				
8	1.5 Mm Single Core Multistrand Wire	2100	M	15.00	31500.00
9	Protective Conduit 32 Mm	564	M	75.00	42300.00
10	Voltage Stabilizer 1 Kva	1	Nos	15423.00	15423.00
11	Air Blower Model No-51 3phase	1	Nos	57261.00	57261.00
12	Mcc(Auto/Manual) Electrical Pump Panel (5+3) Hp	1	Nos	36000.00	36000.00
13	Fittings And Accessories	1	LS	17500.00	17500.00
				Sub Total	**1228353.50**
14	Installation And Commissioning	1	LS	75000	75000.00
			Sub Total		**75000.00**
	GST @ 12% on material and 18% on instllation				160902.42
				Grand Total	**14,64,255.92**
	Customer can do Himself Either by Installer				
	Fertiliser Tanks 100 LTR	4	Nos	1150	4600
	Fittings In Irrigation Room	1	SET	20000	20000
	Civil work for fertilizer machine and tank platform	1	SET	16000	16000
	Earthing For Controller+Pumps	1	No	12000	12000
	*** GST extra as applicable -**			**Sub Total**	**52,600.00**
				Grand Total	**15,16,855.92**

	BORWEL COMPONENET FOR - 400'				
Sr No	DISCRIPTION	QTY	UNIT	RATE	AMOUNT
01	Plain casing - 6"	30	Nos	2776.00	83280.00
02	Ribbed Screen (Filter) - 6"	10	Nos	3496.00	34960.00
03	End cap 6"	1	Nos	236.00	236.00
04	65(2.5")column pipe & coupler 3m	10	Nos	1544.50	15445.00
05	2.5" threaded top connector-ci	1	Nos	1121.50	1121.50
06	2.5" threaded pump connector-ci	1	Nos	1326.50	1326.50
07	2.5" column pipe top connector bend	1	Nos	993.50	993.50
08	laying cost	400	Feet	195.00	78000.00
09	gravels	80	sq feet	250.00	20000.00
10	Subsumbersil 7.5 hp with controller	1	Nos	59975.00	59975.00
11	Electricl Cabele	50	mtr	138.00	6900.00
12	Safty Rope, Top clamp & Top holder Etc	1	set	4500.00	4500.00
13	Transportation				3500.00
				Sub Total	**3,10,237.50**
			GST	**18%**	**55,842.75**
		GRAND TOTAL AMOUNT			**3,66,080.25**

Forwarded by

30/04/25

(Nodal Officer)
Director
Sugarcane Research Institute
RPCAU, Pusa, Samastipur

31/04/25

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Dr Rajendra Prasad Central Agricultural University
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