



KIRDI NEWSLETTER



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AFRICA INDUSTRIALIZATION WEEK

Industrializing Africa: Renewed Commitments towards an Inclusive and Sustainable Industrialization and Economic Diversification



Enterprise Development (MoITED) took part in the event by way of showcasing products and services offered to support MSME's in their entrepreneurship journeys. KIRDI deputy directors were present representing the CEO.

The Africa Industrialization Week 2021 was held in Laikipia County. The event took place at the Governor's Ground in Nanyuki Town, on 15th to 18th November, 2021. The event was hosted by Laikipia Governor Hon. Nderitu Muriithi while the Chief Guests were the two PS's in the Ministry of Industrialization, Trade and Enterprise Development Amb. Johnson Weru Principal Secretary State Department for Trade and Enterprise Development and Amb. Peter Kaberia, CBS,

Principal Secretary State Department for Industrialization.

The AIW is an annual event celebrated in the whole of Africa and primarily spearheaded by MoITED; this therefore usually calls for concerted effort by the Ministry and State Agencies within its Jurisdiction. During the 2021 AIW KIRDI and other State Agencies under the Ministry of Industrialization, Trade and

The four (4) day event which attracted over 5000 visitors, including entrepreneurs, students, and the general public, was officially closed on 18th November, 2021 by Hon David Osiany HSC, Chief Administrative Secretary - MoITED.



VISIT BY PS. HON, AMB. PETER KIRIMI KABERIA TO KIRDI



PS Amb. Peter Kirimi Kaberia with former KIRDI Chairman Hon. Lelelit Lati and Director/CEO Prof. David Rotich K.

KIRDI hosted the Principal Secretary, Ministry of Industry, Trade and Enterprise Development, State Department for Industrialization, Amb. Peter Kaberia CBS, on 7th October, 2021 on a courtesy call to visit the Institute and familiarize with its operations.



Amb. Kaberia, government officials and KIRDI top managers at the South B KIRDI Techno Centre

Featured

- Africa Industrialization Week.
- Visit by GIZ team to KIRDI Kisumu Western Region Centre (KWRC).
- Recognition of KIRDI MSME support beneficiary.
- West Pokot County Departmental Committee.
- PS Visit Hon. Amb. Kaberia to KIRDI Nairobi Headquarters.
- KIRDI participation in Biashara Tuesday.
- MSMEs Success Stories.
- KIRDI support in LVCT Kenya dreams project.
- KIRDI Kisumu Incineration services.
- KIRDI Research Publications.
- Half-year Performance Contract Implementation.
- New technology developed.
- Services Offered to MSMEs.

KIRDI MSME INCUBATION BENEFICIARY RECEIVES GLOBAL RECOGNITION ON 26TH OCTOBER, 2021

KIRDI continues to play role in building capacity for micro small and medium enterprises.

Irene Ikarede Etyiang founder and CEO of Already food who is among KIRDI supported entrepreneurs and currently Incubated at KIRDI Kisumu was nominated among Kenyan business leaders in 2021 Global Meaningful Business 100 awardees. We congratulate Irene Etyiang on this achievement as we pride ourselves in being of great value in making a difference for enterprises.



Ms. Etyiang was featured on NTV among key industry leaders including:

MD and CEO - Equity Group, James Mwangi; CEO – Apollo Group, Ashok Shah; Head of Sustainability KBL, Arnolda Shiundu; and Founder - Olivelink Healthcare, Josephine Suleiman.

“Irene Ikarede Etyiang founder and CEO of Already food who is among KIRDI supported entrepreneurs and currently Incubated at KIRDI Kisumu was nominated among Kenyan business leaders in 2021 Global Meaningful Business.”

WEST POKOT COUNTY DEPARTMENTAL COMMITTEE FOR INVESTEMENT AND COOPERATIVES DEVELOPMENT VISITS KIRDI KISUMU



West Pokot county committee taken through the KWRC facilities

KIRDI Western Region Centre (KWRC) - Kisumu hosted the West Pokot County Departmental Committee for Investment and Co-operative Development on Wednesday 10th November, 2021 the team led by Hon. Augustine Loilo Lotodo, CEC for Trade, Industry & Energy, were on a benchmarking tour to establish areas of collaboration with the services the Institute is offering with an aim of partnership to extend the services to the County, among the areas discussed; Setting up a mango, milk processing

plant, Honey value addition and Incubation Service Centre in the county among others.



VISIT BY GIZ TEAM TO KIRDI KISUMU WESTERN REGION CENTRE (KWRC)



GIZ team led by Asmin uloecku, Head of GIZ Kenya, signs visitors book at KWRC .

KIRDI on 6th November, 2021 hosted the GIZ team led by Asmin Uloecku, from Nairobi. The team visited KIRDI Western Region Centre (KWRC) Kisumu to assess and monitor the progress made with the AGRI-JOBS 4 YOUTH PROJECT. The AGRI-JOBS 4 YOUTH PROJECT is an ongoing program hosted at the KWRC where 20 young enterprises in the Agro-Processing are being Incubated. The youth enterprises are being imparted with skills on financial mentorship

& coaching; market linkages; and networking by KCB Foundation Wing of SME Upscaling and the Equity Foundation Agricultural wing.



KIRDI PARTICIPATION IN BIASHARA TUESDAY

KIRDI hosted the 8th Edition of #BiasharaTuesday. Biashara Tuesday is an initiative of the CAS MOITED Hon. David Osiany which envisions a virtual space where the Ministry is able to reach all its stakeholders and offer support to grow the business of Citizens. The weekly event is hosted by the CAS and CEO of the Agency spearheading Biashara Tues-

day for the week. The event is organized in a way that the CEO of the agency along with his/her the Communication Staff converge in the CAS's office at Teleposta Towers on the designated Tuesday to host the online event; the event is hosted via twitter and through Facebook live. KIRDI hosted the event on Tuesday 26th October 2021 from 10:30am to 12:00pm: the focus of the discussion was to enlighten the public on how KIRDI supports MSME's. KIRDI however, only participated in the twitter chats as the CEO was held up in a Board Meeting. This has necessitated our being allocated a second slot for Tuesday within

March 2022 to enable the Institute have a Facebook Live appearance as well as tweet chat to support MSMEs through our services.

“KIRDI hosted the event on Tuesday 26th October, 2021 from 10:30am to 12:00pm: the focus of the discussion was to enlighten the public on how KIRDI supports MSME's..”

MSME'S SUCCESS STORIES

MAKANJU MERCHANTS LIMITED



Rebah Eboi owner of Mekanju Merchants Limited is one of the Micro Small and Medium Enterprise (MSME) who we incubate at our facility. She says that the high demand and

high profit margin of cashew nuts pushed her to start the business.

In order to satisfy the consumers' taste and preference the cashew nuts have different flavours such as salted, honey glazed, salt and lemon and spicy. Rebah has 1 employee who assists her in the roasting process.

The business is housed at KIRDI and was given the following support; training and capacity building, access to space and machinery to enable pre and post production and were of-

fered assistance when obtaining the KEBS certification process.

“ In order to satisfy the consumers' taste and preference she roast the cashew nuts have different flavours such as salted, honey glazed, salt and lemon and spicy.”



Mekanju product

PIQUANT SPICES

Stephen Machua, director of Piquant Spices is an example of the many entrepreneurs KIRDI has supported in their entrepreneurial journey.

The business is incubated at our food processing plant.

Piquant Spices majorly offer premium ingredients and has been in the market for only one month.

Their competitive advantages in the market

are; Top notch packaging, Products are locally made, they create jobs for young people and offer free delivery services within Nairobi Metropolitan Areas.

Stephens parting shot was “Young people should not be afraid of manufacturing I guarantee you if you put your mind to it you will make it happen thanks to the government for developing such agents”.



“ Piquant Spices majorly offer premium ingredients and has been in the market for only one month.”



Director Piquant Spices Stephen, partner Kamau and employee Michelle showcasing their range of products

KIRDI SUPPORT IN LVCT KENYA DREAMS PROJECT



The project aims to reduce transmission of HIV among adolescent girls and young women aged 9-24 years. Among the interventions identified for implementation is economic strengthening, through technology skilling, to enable them acquire production skills and be incubated where necessary. This will provide an avenue for alternative livelihoods and income.



Training of LVCT young entrepreneurs

LVCT Kenya approached KIRDI in April 2021 and through this engagement technology selection for skilling was undertaken. The areas for capacity building were identified as follows; Food Technologies, Natural Products and Chemical Engineering Technologies and Cosmetics (skin care) technologies. The training was structured to

be undertaken in a group setting in the various technology areas at KIRDI Headquarters South C. It was tailor made to fit the entrepreneurs' profiles and delivered in form of lectures, demonstrations and emphasis on practical sessions. The target was to train 110 participants in these technology areas and KIRDI managed to organize tailored trainings in the above areas for 91 trainees, representing an uptake of 83%.

The training was undertaken from 26th July, 2021 to 26th August, 2021.

Training at KIRDI afforded the young entrepreneurs an opportunity to network, actively interact with our trainers and be in an environment where they can visualize their production setting and benchmark with our in-house MSMEs in the business

incubation and common manufacturing platforms.

Following the successful skilling phase, KIRDI & LVCT Kenya - Dreams graduated the young entrepreneurs with certificates of training and issuance of production kits to jumpstart their entrepreneurial journey.



KIRDI Deputy Director Dr. Arthur Onyuka issuing certificate to a young entrepreneur

KIRDI KISUMU INCINERATION SERVICES



KIRDI Kisumu Western Region Centre (KWRC) through its incineration services, hosted a programme organized by KRA in collaboration with other governmental agencies such as National Environment (NEMA), County Government and Anti Counterfeit Authority (ACA) conducted a destruction exercise of illicit excisable goods.



Officers from involved agencies taking part in the activity



Destruction of Illicit goods ongoing at KWRC premise

KIRDI PICTORIALS



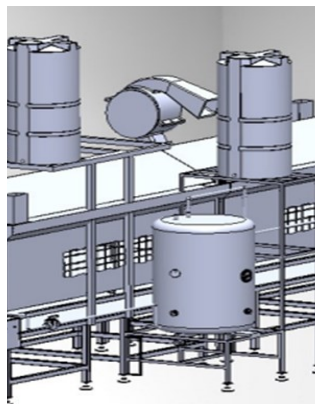
KIRDI MSMEs PRODUCTS



KIRDI RESEARCH PUBLICATIONS

TECHNO-ECONOMIC ANALYSIS OF A REFRACTANCE WINDOW DRYER PROTOTYPE DEVELOPED BY KENYA INDUSTRIAL RESEARCH AND DEVELOPMENT INSTITUTE

By *Winstone Asugo Nyaguti, George Wafula Wanjala, Joseph Kamau and Samuel Warui*



The output will be working prototypes and commercial based equipment for use in food, nutraceutical and pharmaceutical industries in East Africa

The Refractance window dryer (RWD) is a fourth generation dehydration technology. RWD is used to dry heat-sensitive materials because it retains high nutrient content, colour, flavour, aroma and bioactive compounds. The dehydrated products have a high sensory quality.

There were no RWD in East Africa despite their excellent performance hence need for local fabrication of RWD Prototypes that can meet the technical, economical and socio-economical re-

quirements. This paper describes the performance evaluation and economic analysis of the RWD prototype developed at the Kenya Industrial Research and Development Institute (KIRDI). Indicators such as drying rate and drying time were used to assess its technical performance.

KIRDI RWD prototype is a versatile technology that can be deployed in remote settings resulting to reduction of post-harvest losses as well as carbon emission.

Currently, sun drying, solar drying, cabinet drying, spray

drying, drum drying, fluidized bed drying and freeze drying are available in Kenya. They possess various advantages and equally significant drawbacks. Therefore the adoption of KIRDI's Refractance window dryer would be beneficial to Micro Small and Medium Enterprises in providing timely drying services and improve their socio

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USE AND EFFICACY OF LOW TEMPERATURE PLASMA IN FOODS: PROMISING INTERVENTION ON AFLATOXIN CONTROL IN MAIZE IN KENYA – A REVIEW

By *H.M. Kamano, Okoth M., Wambui Kogi M. and P. Kuloba*

Maize is the most important food security crop in Kenya and plays an important role in human nutrition. Mycotoxins are fungal toxic metabolites which naturally contaminate food and feed. When ingested, inhaled or absorbed through the skin, even in very small concentrations, are associated with various cancers, retarded growth, suppressed immunity and mutations among other complications. Aflatoxins especially aflatoxin B₁, are considered the most lethal in the group of more than three hundred known mycotoxins.

In Kenya, aflatoxin contamination in maize leads to huge losses in the country's breadbasket and

also in the grain reserves. One of the possible methods for control of the aflatoxin menace in maize would be through the use of plasma technology. Plasma, an electrically energized matter in form of a gas that is generated at different atmospheric pressures, has several uses. At low temperature, it makes the process of decontamination practical, inexpensive and suitable for products whereby use of heat is not desired.

Non thermal plasma, a new discipline in food processing has been shown to destroy microorganisms including spores to undetectable levels. Over the years, there has been

increased concern over the rising cases of aflatoxin poisoning in Kenya due to contaminated maize.

The presence of aflatoxins is promoted by various factors, among them poor storage conditions, soil type, insect activity and drought conditions before harvest. Several measures including use of hermetic storage types such as pils bags to store maize and proper drying of maize to the right moisture content to discourage mould growth have been suggested and used to tackle the aflatoxin menace.



Aflatoxin contamination in maize

One of the possible methods for control of the aflatoxin menace in maize would be through the use of plasma technology.

HALF-YEAR PERFORMANCE CONTRACT (PC) IMPLEMENTATION

KIRDI signed performance contract with the Ministry of Industrialization, Trade and Enterprise Development (MoITED) for the Financial Year 2021/2022. Key half year achievement is as follows;

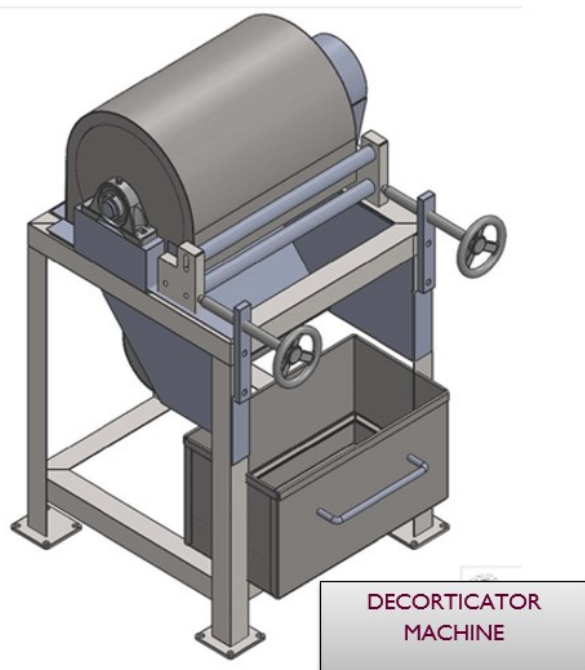
- 6 new technologies were developed surpassing the target of 4.
- 13 technologies transferred against a target of 8.
- 22 MSMEs products were upgraded against a target of 16.
- 190 MSMEs were supported through CMF and Business Incubation against a target of 190.

Lastly Training and Capacity Building target was set at 198 MSMEs while 182 MSMEs were supported.

Overall there was a major achievement in respect to the service delivery of the Institute and the MSMEs supported during the stipulated period.

KIRDI Projects/Programs	Actual	Target
Number of MSME's supported under CMF and Business Incubation	190	182
Number of MSME's supported under Training and Capacity Building	198	150
MSME's Products Upgraded	22	16
Technologies Transferred	13	8
New Technologies Developed	6	4

NEW TECHNOLOGY: DECORTICATOR MACHINE



The decorticator machine is used to extract fiber from the pseudostem of a banana. During the extraction process, the stem is fed manually in the prototype machine.

Fiber is extracted from the pseudostem using a decortication process where a roller with scratched surface is compressed into a stationary bar that will crush and scrapes the trunk.

The prototype was first designed using solid works software after which material were procured and fabrication done

SERVICES OFFERED TO MSMEs

KIRDI provides the following services to MSMEs;

Training and Capacity Building

KIRDI offers practical and industry related training courses that are custom made and focused on the needs of MSMEs. The trainings are undertaken from both within the Institutes premises and at the MSMEs premises where possible.

The training are undertaken in the following areas, but not limited to: Food Technology, Natural Products, Leather and Leather Products, Honey Processing, Textile Technology, Electrical Engineering, Civil Engineering, Mechanical Engineering, Industrial Chemistry, Power Resource, Ceramics and Building Materials and Mushroom production.

The training programs usually take a period of one (1) to Three (3) weeks depending on the complexity of the technology. The practicality of the training is emphasized by the one on one interaction between the trainer and the trainee hence ensuring effectiveness of the program.

Business Incubation

KIRDI runs an incubation program whereby startups are housed within the organization for a specific period of time depending on the client's needs and agreeable terms with the Institute.

The institute also runs on-site service where research scientists support entrepreneurs and industrialists from their establishments. The Incubatees in-house are given technical support in their areas of interest. The incubation programs aims to grow MSME's by supporting and nurturing them to create products that have a market reach and one that is able to compete globally.

Providing Access to Common Manufacturing Facilities

This is a concept whereby KIRDI provides facilities (space, machine & utilities) for MSMEs to process their products at a fee. Common Manufacturing Facilities are offered in the following area: Food Technology, Natural Products, Leather, Engineering, Textile and Ceramics & Building Materials.

Product Development

Product development involves modification of an existing product or formulation of an entirely new product that satisfies a newly defined market niche. KIRDI offers its clients an opportunity to develop new products or value add on existing ones to fill a specific gap and meet the MSME's objective in upgrading their products to international standards.

Quality Assurance and Laboratory Testing

The institute offers laboratory services aimed at enhancing quality of products with a focus on MSMEs to enable them attain and sustain international competitiveness. Our strength lies in the following areas:

- Testing and analysis of water
- Food analysis
- Animal Feeds analysis
- Chemical analysis
- Leather, textiles, minerals and related material testing
- Cook stove testing

Consultancy

The Institute offers consultancy services in industrial technology, development and application.



Juice processing

“The training programs usually takes place between one (1) to Three (3) weeks depending on the complexity of the technology.”



SMEs processing under Business Incubation Services



Laboratory testing



Animal feeds ration formulation



Training of MSMEs

2021/2022



KIRDI KISUMU CENTRE



KIRDI NAIROBI HEADQUARTERS

VISION

“A world class center of excellence in Industrial Research, Technology and Innovation”

MISSION

“To undertake Industrial Research and Transfer Innovative Technologies for Socio-Economic Development”

CORE VALUES

In the endeavor to realize its vision and mission, KIRDI upholds the following core values:

Customer Focus:

KIRDI will not only meet but exceed customers’ expectations.

Integrity & Accountability:

The Board and Staff of the Institute will uphold integrity and accountability while discharging their duties and responsibilities.

Professionalism:

The Board of Directors and staff of the Institute will exercise professionalism in all their operations.

Creativity & Innovativeness:

KIRDI is a learning organization that embraces creativity and innovativeness in responding to changes in the operating environment.

Teamwork:

KIRDI Board of Directors and staff work together, as one team, towards the realization of the Institute’s mandate.

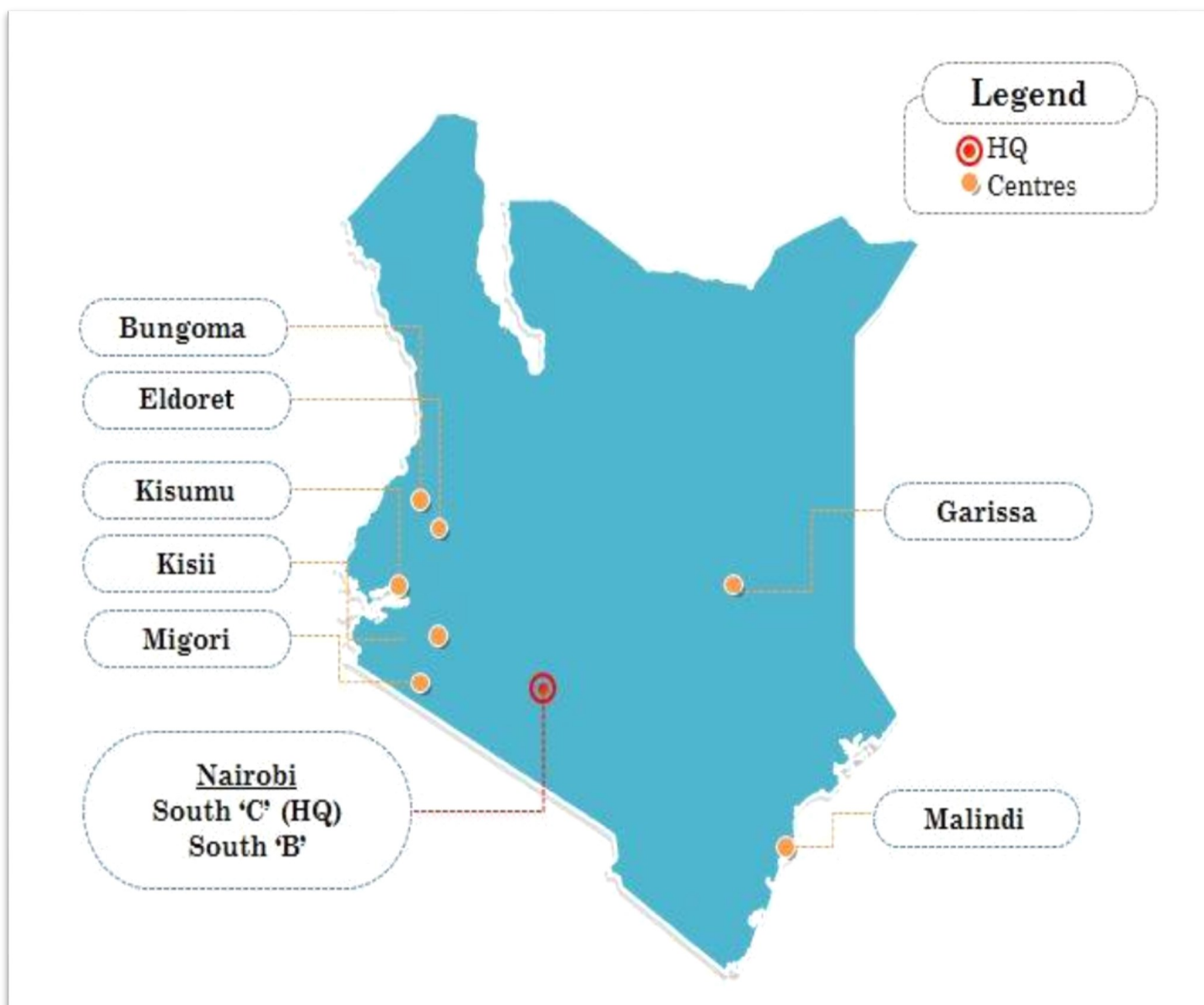
Environmental Sustainability:

The Institute commits to protect the environment as it implements its programmes.

www.kirdi.go.ke



KIRDI LOCATIONS



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