Memory of the World Asia Pacific Regional Register Nomination Form

1 Title of Documentary Heritage Item or Collection (max 10 words)

Indonesian Sugar Research Institute's Archives 1887-1986 Period: The Role of ISRI's Research Activities to the World Sugar Industry

2 Summary (max 200 words)

Give a brief description of the documentary heritage being nominated, and the reasons for proposing it. Include the type of document heritage such as manuscripts, papers, film etc. Highlight the nature, uniqueness and significance of the nominated documentary heritage.

The Indonesian Sugar Research Institute (ISRI/P3GI) is a research institute founded in Pasuruan City by sugar industrialists on July 9 1887. It was first established under the name Proefstation Suikerriet Oost Java. ISRI is the spearhead in the development of the sugar industry, especially in the Asia Pacific. ISRI has played a big role in the development of sugar dynamics in the world, one of which is the discovery of POJ 2878 which is worldwide. The Indonesian Sugar Archive describes the process of building a scientifically based sugar industry. The existence of sugar archives in Indonesia and elsewhere shows the importance of scientific research as a pillar of the world sugar industry, especially since the last decades of the 19th century.

Until now, this institution is called The Indonesian Sugar Research Institute (ISRI). ISRI has an important role in supporting the sugar industry in the Dutch East Indies and the world. The archives of the proposed sugar research institute are kept by the East Java Provincial Government through the Library and Archives Service and partly by the Indonesian Sugar Research Institute (ISRI/P3GI).

Several stored archives contain information on the results of long-standing international collaboration between sugar research institutions, which has become the scientific basis for world commercial sugar production, sugar research, technological developments, international cooperation, and the latest discoveries related to the world sugar industry.

The ISRI's archives proposed in MOWCAP are in the form of textual archives with a total of 174 archive numbers stored at the East Java Province Library and Archives Service. The total number of archives is 108 in the form of textual archives about research and 68 are archives about administration and 67 are photo archive numbers. Besides that, there are 18 textual archive numbers and 2 photo albums stored in the ISRI's Library.

3 Nominator/s Contact details

3.1 Name of nominator/s (person/s or organisation/s)

1. Library and Archives Office of East Java Province
2. Indonesian Sugar Research Institute

3.2 Relationship to the nominated documentary heritage

The Library and Archives Office of East Java Province is an institution that acquires archives at the Indonesian Sugar Research Institute (ISRI/P3GI). This is an effort to save archives in order to protect the information contained in archives, as well as maintain the physical form of archives

3.3 Contact person/s

1. Head of the Library and Archives Office of East Java Province
2. Head of Indonesian Sugar Research Institute

3.4 Contact details	
Library and Archives Office of East Java Province	
Name	Ir. Tiat S. Suwardi, M.Si
Address	Jl. Menur Pumpungan no. 32 Surabaya, Jawa Timur, Indonesaia
Telephone	+6281332205467
Email	disperpusip@jatimprov.go.id
Indonesian Sugar Research Institute	
Name	Aris Lukito, S.P, M.Si
Address	Jl. Pahlawan No.25, Pekuncen, Kec. Panggungrejo, Kota Pasuruan, Jawa Timur
Telephone	+6281390646279
Email	contact@p3gi.co.id

4 Declaration of Authority

I certify that I/we have the authority to nominate the documentary heritage described in this document to the Asia Pacific Regional Memory of the World Register. All nominators must sign here. (A signed support letter from the nominators' National Commissions is required when the nomination is from two or more Member States. See Section J in the Process document for more details)

Library and Archives Office of East Java Province		Signature
Name	Ir. Tiat S. Suwardi, M.Si	
Address	Jl. Menur Pumpungan no. 32 Surabaya, Jawa Timur, Indonesaia	
Telephone	+6281332205467	
Email	disperpusip@jatimprov.go.id	**Ir. Tiat S. Suwardi, M.Si**

Indonesian Sugar Research Institute		Signature
Name	Aris Lukito, S.P, M.Si	
Address	Jl. Pahlawan No.25, Pekuncen, Kec. Panggungrejo, Kota Pasuruan, Jawa Timur	
Telephone	+6281390646279	
Email	contact@p3gi.co.id	**Aris Lukito, S.P, M.Si**

5 Legal Information

5.1 Owner/s of the documentary heritage (name and contact details, if different from the nominator/s)

Library and Archives Office of East Java Province	
Name	Ir. Tiat S. Suwardi, M.Si
Address	Jl. Menur Pumpungan no. 32 Surabaya, Jawa Timur, Indonesaia
Telephone	+6281332205467
Email	disperpusip@jatimprov.go.id
Indonesian Sugar Research Institute	
Name	Aris Lukito, S.P, M.Si
Address	Jl. Pahlawan No.25, Pekuncen, Kec. Panggungrejo, Kota Pasuruan, Jawa Timur
Telephone	+6281390646279
Email	contact@p3gi.co.id

Please note: Written permission for nomination of this item from the Owners and/or Custodian/s if different from the nominator **must be attached** to this Nomination Form.

5.3 Legal status

Provide details of the legal and administrative powers for the preservation of the documentary heritage.

In accordance with Article 3 of Law No. 43 of 2009 concerning Archives, one of the objectives of organizing archives in Indonesia is to ensure the safety and security of archives as evidence of accountability in the life of society, nation and state.
According to Article 59 paragraphs (1) and (2) of the same Law, ensuring the safety and security of archives is carried out by carrying out archive acquisition, archive processing, archive preservation and archive access services. The process of managing provincial level archives in Indonesia is carried out by archival institutions. The Archives Institution in the East Java provincial government based on Regional Regulation Number 4 of 2015 as the organizer of provincial level archives is the Library and Archives Service. Thus, provincial archival institutions must be able to guarantee the security and safety of archives at the provincial level as a national responsibility in the life of society, nation and state which includes acquisition, processing, preservation; and archive access services. The target is to save provincial government agencies, provincial regional business entities, individuals, community organizations, provincial level political organizations.
The acquisition of ISRI archives was carried out and recorded in the Record of Transfer Archive which was signed on June 7 2002 by ISRI Director Dr. Mirzawan P.D.N., MS., and Head of the East Java Provincial Archives Office, M. HAKIM, SH, MM. The handover process was initiated through selection and inventory of the archives of an archival institution in East Java called the National Archives of the Republic of Indonesia. When it was acquired, the ISRI archives were not yet perfectly organized, even though they had a list of archives. The processing and creation of archival retrieval tools in the form of an inventory was carried out in stages from 2007 – 2010. Currently, because the ISRI archives have universal values and some are fragile, the East Java Provincial Government, through the Library and Archives Service, carries out maintenance, preservation, restoration, scanning and binding of book-shaped archives. Meanwhile, the scanned archives are included in the National Archives Information System (SIKN) - National Archives Information Network (JIKN).

5.4 Accessibility

Describe how the documentary heritage may be accessed

Any access restrictions should be explicitly stated below (for instance if advance permission is required, or if general access is not permitted by tradition or custom of the originating community).

ISRI archives can be accessed by archive users either through SIKN with the link: with the link http://sikn.jatimprov.go.id/index.php/inventaris-arsip-pusat-penelitian-perkebunan-gula-indonesia-p3gi-pasuruan or manually by coming directly to the Office of the Library and Archives Office of East Java Province. We have also provided several archives that have been digitized. The archive can be accessed with the following link: https://bit.ly/ISRIarchives. ISRI archives are often used by researchers, especially historians who examine the development of sugar in Indonesia, as well as its role internationally. Many students use the ISRI archives to complete their final assignments, or just want to make scientific studies about sugar factories, growing sugarcane procedures, sugar-cane pest anddisease, etc.

5.5 Copyright status

Describe the copyright status of the item(s) / collection, if known.

The answer to this question is not taken into account when determining whether the nominated documentary heritage meets the criteria for inscription.

The creator and owner of the archive is the Indonesian Sugar Research Institute (ISRI/P3GI), while its management is under the auspices of the Library and Archives Office of East Java Province.

6 Details of the Nominated Documentary Heritage

6.1 Exact title of the documentary heritage

Give the exact title of the nominated documentary heritage and the exact name of the nominating; institution/s.

Exact Title:

Indonesian Sugar Research Institute's Archives 1887-1986 Period: The Role of ISRI's Research Activities to the World Sugar Industry

Exact Nominators:

1. Library and Archives Office of East Java Province
2. Indonesian Sugar Research Institute

6.2 Type of documentary heritage

Describe the type/s of documentary heritage. Examples include papers, photos, digital, maps, manuscripts, film etc.

The nominated documentary heritage consists of paper documents and photographs. There are collection records the long-existing international collaboration among sugar research institutes, exchanges of ideas and knowledge on various aspects of sugarcane cultivation and manufacture, detailed records of the struggle against sugarcane diseases and pests, visits from other countries to ISRI, and etc.

6.3 Catalogue or registration details

Give the catalogue or registration details for the item or collection.

A nominated collection or archival fonds must be finite, with clear beginning and end dates. If the catalogue or registration details are too long, provide a description of the contents with sample catalogue entries, accession or registration numbers. ***Or*** *you can add the catalogue/registration details as an appendix, or provide a link to an online inventory.*

Catalogue or registration can be found on this following link,
https://bit.ly/ISRIattachment

6.4 Images of the documentary heritage.

Three to six digital images of the documentary heritage should be provided as attachments to this form. By providing the images you are agreeing that they can be used by MOWCAP for the purpose of promoting Memory of the World e.g. newsletters, website etc. Please clearly note on this form if you do not wish MOWCAP to use the images for publicity or promotional purposes (for instance if not permitted by tradition or custom of the originating community).

ISRI's digital image can be downloaded from this link, https://bit.ly/ISRIDigitalimage

6.5 History/Origin/Background/Provenance

Set out the history of the item or collection - its 'life story' or provenance - from the time when it was created to its place in your institution. This is critical to the item or collection's authenticity. You may not know all the details, but give as comprehensive an account of the item or collection's provenance as you can.

The rescue of ISRI archives was pioneered during the period of the provincial archives institute as part of the National Archives of the Republic of Indonesia in 1999 - 2000. The initiation began through in a limited coordination meeting between plantation institutions and research centers in East Java at the PTPN Surabaya Regional XI Coordinator's office. Present at the limited meeting were delegates from PT. Perkebunan Nusantara (PTPN) XI and PT. Perkebunan Nusantara XII, Indonesian Sugar Research Institute (ISRI) and Indonesian Coffee and Cocoa Research Institute. The meeting specifically discussed the conservation and preservation of plantation archives. However, due to resource constraints, the archive rescue agenda has not been implemented.

In 2001, in line with the Regional Autonomy policy by the Indonesian government, the National Archives of the Republic of Indonesia which was delegated to the Provincial government was restructured into the East Java Provincial Archives Office, carrying out data collection and re-registration of ISRI archives in Pasuruan. In May 2002, 32.5 ml of archives were successfully recorded and a temporary archive list was made which was considered to have historical value and high information value for research purposes. These archives consist of evidence archives and ISRI research activities, as well as administrative information.

After the list for creating temporary archives, the leadership of ISRI as the archive creation institution approved the handover of the archives it created to the archival institution of East Java Province.

The handover process was carried out on June 7th 2002 with evidence of the minutes of archive handover signed by ISRI Director Dr.Ir. Mirzawan P.D.N., MS., with the Head of the East Java Provincial Archives Agency, Muhammad Hakim, SH, MM.,

The ISRI archives were only processed intensively by the Archives Office in 2007 - 2010. The result was an archive retrieval tool in the form of an archive inventory of 1,367 access numbers. Currently, some of these archives have been digitized and entered into the national archival information system application, so that they can be accessed by the public.

6.6 Bibliography

Provide a list of at least 3 published sources that have been produced using the nominated documentary heritage.

ISRI's archives are archives that are accessed quite a lot by researchers, including students who intend to complete study assignments. Several bibliographies related to this ISRI archive study include:

1. Baroroh, S.N. 2015. "Peningkatan Sistem Produksi Gula di Pabrik Gula Pesantren-Kediri Tahun 1890-1940". Tesis, Universitas Gadjah Mada.
2. Dian Pebrianto. 2016. "Pabrik Gula Tjoekir di Jombang tahun 1884-1960". Skripsi, Universitas Airlangga. Diakses dari https://repository.unair.ac.id/14670/
3. Elson, R.E. 1984. Javanese Peasant and the Colonial Sugar Industry: Impact and Change in an East Java Residency. Singapore: Oxford University Press.
4. Faizin, M. 2016. "Dinamika Pabrik Gula Mrican di Kediri Tahun 1938-1945". Skripsi. Universitas Airlangga. Diakses dari https://repository.unair.ac.id/56471/13/KKB%20KK-2%20FS%20SEJ%2032_16%20Fai%20d-min.pdf
5. Hartveld, A.J. 1996. "Raising cane: Linkages, organizations and negotiations in Malang's sugar industry, East Java." Delft: Eburon.
6. Hasyrul, Afif. 2014. "Peran "proefstation oost java" terhadap industri gula nasional tahun 1947-1958". Skripsi, Universitas Sebelas Maret. Diakses dari (https://digilib.uns.ac.id/dokumen/detail/42946
7. Knight, G.R. 2012. "From Merdeka to Massacre: The Politics of Sugar in the Early Years of the Indonesian Republics", Journal of Southeast Asian Studies, Vol 43, No 3.
8. Knight, G.R. 2000. "The sugar industry of colonial Java and its global trajectory", South-East Asia Research, Vol. 8, No. 3.
9. Knight, G.R. 2014. Sugar, Steam, and Colonial Project: The Industrial Project in Colonial java 1830-18. Adelaide: Adelaide University Press.
10. Masruhan, M. 2016. "Kuasa Gula: Perkembangan Industri Gula di Karesidenan Surabaya, 1870 - 1930-an". Skripsi. Universitas Gadjah Mada. Diakses dari http://etd.repository.ugm.ac.id/penelitian/detail/93298
11. Nurcahyo, Abraham. 2011. Tata Kelola Industri Gula di Situbondo Masa Kolonial dan Kebijakan Pergulaan Masa Kini, Jurnal Agastya, Vol. 01, 02, Julii.
12. Nurcahyo, Abraham. 1999. Manajemen Pabrik Gula Di Situbondo Dalam Menghadapi Krisis 1925-1941. Tesis. Yogyakarta: Program Pasca Sarjana UGM.
13. Paramita, Kartika Pradnya. 2019. Pabrik Gula Djatie dan Pengaruhnya ke Masyarakat Nganjuk tahun 1898 hingga 1942. Skripsi, Universitas Airlangga. Diakses dari https://repository.unair.ac.id/89808/
14. Rimasari, Sakafitri. 2021."Industrialisasi Gula di Jawa Timur: Pabrik Gula Meritjan Kediri 1883-1929", Historiography: Journal Indonesian History and Education, Vol. 1 No. 1.
15. Winarni, Retno, Sunarlan, Nurhadi Sasmita. 2022. Tebu Rakyat Intensifikasi (TRI) di Jember 1975-1998. Jember: Jember University Press.
16. Wiseman, Roger. 2001. "Three Crises: Management in the Colonial Java Sugar Industry 1880-1930", PhD Thesis. University of Adelaide.

17. Wulan, Dyah Retno. 2020. "Perkebunan Tebu di Madiun Masa Belanda Tahun 1900-1930". Diakses dari https://ejournal.unesa.ac.id/
18. Dianpratiwi, Trikuntari dkk. 2018. "Daya Saing Usahatani Tebu terhadap Komoditas Eksisting di Wilayah Kerja Pabrik Gula Wonolangan Kabupaten Probolinggo Tahun 2018", Caraka Tani: Journal of Sustainable Agriculture. Vol. 33 (1).
19. Maulidiah, F. 2012. "Perkembangan Kemitraan Petani Tebu dengan PG Krebet Baru Perilaku Ekonomi Petani Tebu", Skripsi, Jurusan Sejarah Fakultas Ilmu Sosial, Universitas Negeri Malang.

A bibliography provides evidence that the documentary heritage has been used by scholars, and knowledge of its impact and influence is in the public domain. It is a good idea to cite the works of scholars from outside your own country, as well as local scholars, to demonstrate this influence.

6.7 Names, qualifications and contact details of experts

Provide the details of two to three independent people with expert knowledge about the values and provenance of the documentary heritage who may be contacted by MOWCAP for further information on your nomination. Note that the Register Sub Committee (RSC) may also contact other experts.

The names and contact details of your referees will not be publicly disclosed by MOWCAP nor disclosed without their permission to any third party.

Name Prof. [redacted] M.A., Ph.D.	Qualifications 1. Professor of History, Faculty of Humanities, University of Jember. 2. The National Collective Memory Expert Team of East Java Province	[redacted]
Name Dr. [redacted]	Qualifications Postdoctoral Researcher of History (Cultural History, World History, Colonial History), Rural and Environmental History, Department of Social Science Wageningen University & Research	[redacted]

I certify that the above named experts have given their written permission for their names and contact details to be used in connection with this nomination to the Memory of the World Asia Pacific Regional Register.

7 Authenticity and Integrity

7.1 Authenticity and Integrity

Is the documentary heritage what it appears to be? For example, has its identity and provenance been reliably established; are supplementary parts being kept elsewhere and not included in the nomination; has it been altered or damaged; are sections or pages missing; is part of the documentary heritage lost?

The Indonesian Sugar Research Institute's Archives are authentic, complete and reliable. They are well preserved by the custodian at their office. ISRI archives are one of the archives that are frequently used by archive users and have been confirmed as the Collective Memory of the Nation

8 Primary criteria: Regional Significance

More details on what is required for each criterion are provided in the MOWCAP Register Guidelines document available on the MOWCAP website

You only need to provide information for criteria that are relevant to your nomination

8.1 Historical Significance

What does the documentary heritage tell us in relation to the history of the Asia Pacific region as a whole, or to a sub-region such as Central, South, Southeast, East Asia or Melanesia, Micronesia, Polynesia, Australasia?

Competition has predominantly characterized the world's sugar commodity. Many sugar-producing countries competed for securing major position in the international sugar market. In contrast to the world's sugar economy, the scientific research activities on sugar commodity have demonstrated a strong feature of collaboration. The Indonesian sugar archives kept under the Indonesian Sugar Research Institute (ISRI/P3GI) collection records the long-existing international collaboration among sugar research institutes, which has formed the scientific foundations of the world's commercial sugar production. The sugar-based economies of the Asia-Pacific region in the past has been achieved through collaboration involving the worldwide materials and knowledge exchanges. Aspects of the sugar production, from its agronomy, physiology, cultivation techniques, seedlings technology, to sugar manufacturing processes, have been meticulously investigated and discussed among experts from the sugar-producing countries.

One of the international collaborations took the form of sugarcane seedlings exchanges. From colonial Indonesia, sugarcane seedlings were sent abroad, such as Hawaii, Australia, South Africa, Spain, as reported by Dr. O. Posthumus (ISRI Archives, No 1366). Also reported is the planting of sugarcane varieties from Java in Louisiana, USA and Puerto Rico (ISRI Archive No. 1364). Meanwhile, Indonesia also imported sugarcane varieties from other countries. In 1897 The East Java Sugar Experiment Station had a collection of 121 sugarcane varieties imported from abroad. One of them was the Red Fiji cane which was tested against notorious *sereh* disease (ISRI, 1997). The imported sugarcane varieties played an important role in the sugarcane breeding program as part of the efforts to increase sugar productivity and its resistance against diseases.

Sugarcane seedlings exchanges continued during the post-colonial era, supporting the sustaining sugarcane breeding program. Correspondence archive with the French Embassy in 1953 report the delivery of sugarcane seeds (ISRI Archives, No. 694), shipments of sugarcane seeds from the Oklahoma Agricultural and Mechanical College School of Arts and Sciences, United States of America (ISRI Archives No. 696). Exchange of seedlings with Australia, March 1957 (P3GI Archives, No. 703). Import of sugarcane seeds from the US (ISRI Archives, No. 701). Delivery of sugarcane seedlings to India (ISRI Archive No. 978), to Pakistan (ISRIArchive, No. 997), shipment of sugarcane specimens to Venezuela (ISRI Archive, No. 998). From a scientific point of view, sugarcane exchanges have long become a unifying factor of the Asia and Pacific region, especially among the sugar producing countries.

Making a use of sugarcane varieties coming from inside Indonesia and abroad, the ISRI advanced the sugarcane seedling technology. From this research station, a superior sugarcane variety was found, POJ 2878, which was described as a 'wonder cane' (Knight, 1993:19; Van

der Eng, 1996:218). The discovery of POJ 2078 was a great success for Indonesia sugar industry and contributed greatly to other sugar producing countries. This variety was resistant to *sereh* and mosaic diseases, and also produced high sugar yields. POJ 2878 became a good parent for most of the sugarcane commercial varieties produced worldwide (ISRI, 1997:12). Records of research on sugarcane were neatly and continuously recorded (ISRI Archives, No. 8; ISRI Archives, No. 34; ISRI Archives, No. 114; ISRI Archives No. 213). A number of sugarcane varieties were researched and developed including during the Japanese occupation and revolution, when many sugar factories stopped operating and were diverted to other uses (Archives of ISRI, No. 682, No. 687, No. 715, No. 877, No. 878, No. 1127). Sugarcane planting trials were carried out in various places to obtain optimum results according to local ecological characteristics. Among the archives are No. 120, no. 146; No. 156, No. 168, No. 183, No. 760).

Apart from sugarcane materials, exchanges of ideas and knowledge on various aspects of sugarcane cultivation and manufacture also took place. There are archives recording the active role of colonial Indonesia as the host of the Third International Society of Sugar Cane Technologists (ISSCT) Congress held in Surabaya in 1929 (Archives of ISRI, No. 1365). Many delegates from the sugar producing countries attended the event. It was a recognition of the importance of colonial Indonesia in the context of the world's sugar-cane production. In 1935 a delegate of four experts was sent to the 5th ISSCT Congress held in Brisbane. During the independent era, Indonesia became the host of the 19th ISSCT Congress held in Jakarta on 21-31 August 1986. This event was attended by 554 participants, representing 55 countries throughout the world. There were 119 papers related to all aspects of the sugarcane industry were presented in the discussion (Proceedings of the XIX ISSCT Congress, 1987). There is also archive collection documenting the ASEAN sugar industry cooperation (ISRI Archive, No. 1053), the involvement of the sugar industry in the International Fair (ISRI Archive No. 985).

The exchange of knowledge and ideas on sugar commodity could not be separated from the wide-range of scientific research activities. The ISRI archives record well the struggle to improve the sugar industry. The establishment of sugar research station in Pasuruan, which during the colonial period was called *Het Proefstation Oost-Java*, became a pillar that supported the development of sugar industry in colonial Indonesia and promoted it into one of the world's most efficient sugar industries. The ISRI's archives collection is comprehensive, covering various aspects of the sugar commodity such as plant agronomy, cultivation techniques and seeds technology, sugar processing machinery and equipment, relations between sugar factories and ISRI in the context of domestic and international networks. ISRI's international reputation during the colonial period was proven by the visit of the King of Siam (Photo Archive of ISRI Library, link: https://bit.ly/fotoP3GI).

The optimal growth of sugarcane plants requires certain ecological conditions, especially lands, irrigation, rainfall, sunlight, soil nutrient requirements, and protection from pests and diseases. Conditioning of the land to suit the requirements of growing sugarcane continued to be improved through technological adaptation. In terms of land preparation, sugarcane cultivation in Java adopted Reynoso system characterized by a lot of soil digging works. Introduced for the first time in Cuba by Don Alvaro Reynoso in 1863, the Reynoso system was adopted and applied in Java with some modifications to adjust with different soil conditions, including methods of Moquette, Brouwer, Mojopanggung, Comal, Kadhipaten, Tulangan, Ceuplak, and Brabandt (ISRI, 1997:15).

Land mapping and soil analysis were carried out at all sugarcane planting locations to determine

the suitability of the land, the required treatment regarding the type and dose of fertilizer needed to achieve optimum sugarcane yields. Archives containing land mapping and soil analysis for sugarcane plantations include ISRI Archives, No. 1, No. 16, No. 82, No. 146, No. 153, No. No. 157, 158, no. 166, No. No. 202, No. 214, 278, No. 292, No. 351, No. 523, No. 895, No. 1364. There is also an archive that records rainfall (ISRI Archives No. 113, No. 149, 166, No. 189, No. 201, No. 281, No. 331, No. 335, No. 472, No. 1119, No. .1200, No. 1201, No. 1202, No. 1203, No. 1204), notes on measuring sunlight (ISRI Archives No. 266, No. 268, No. 514).

There were also technological interventions through trials of various chemical fertilizers to support sugarcane productivity. Records of the efforts are recorded in a number of archives. The trial use of ZA fertilizer is recorded in the ISRI Archive No. No. 24, No. 64, No. 88, No. 108, No. 181, No. 301, No. 315, no. 730, No. 752. Trials on the use of phosphate fertilizers are contained in the ISRI Archives No.183, No.188, No. 200, No. 203.No. 222, No. 728, and No. 731. Trials on the use of urea and several other types of fertilizers such as ZA and ammonium, are recorded in ISRI Archives No. No. 24, No. 132, No. 421, No. 729, No. 734, No. 737, No. 739, including green manure (ISRI Archive No 242, No. 1097).

The ISRI archive contains detailed records of the struggle against sugarcane diseases and pests. Indonesia has contributed to the world's vocabulary of sugarcane diseases, namely *sereh*, *pokkahboehng* and *sembur.* The investigations of sugarcane pests and diseases such as citronella disease, red streak, yellow spot, yellow streak, leaf wilt, and leaf scald (ISRI Archives No. 4, No. 16, No. 23, No. 47, No. 86, No. 117, No. 124, No. 154, No. 194, No. 237, No. 460, No. 771, No. 773, No. 779, No. 792, No. 797, No. 1065, No. 1365). Likewise research on sugarcane pests such as mealybugs, stem borers, leafhoppers and rats (ISRI Archives, No. 42, No. 562, No. 794, No. 795, No. 798, No. 1365). The ISRI Archive contains records of controlling sugarcane diseases and pests (ISRI Archive No. 579). The method of controlling sugarcane borer pests was researched by Dr. E.H. Hazelhoff (ISRI Archives No. 1366), and its eradication trials (ISRI Archives No. 746, No. 1102).

Advancements in seedling technologies, cultivation techniques, pest and diseases control, and sugar processing played a pivotal role in boosting sugar productivity. From 1918 to 1931, the average sugar production per factory surged from 9,600 tons to 16,100 tons, marking a substantial 65% increase Sugar yields per hectare also saw a remarkable growth of over 30%. By 1938, Java boasted the world's highest sugar yield per unit area of harvested cane, with an average of more than 160 quintals per hectare, representing a tenfold increase from a century earlier (Van der Eng, 2003). Sugar emerged as the cornerstone of the Netherlands East Indies economy, with its export value dominating from 1885 to 1930. Initially constituting 45% of total exports in 1885, the share of sugar exports rose to 48% by 1920 (Furnivall, 1939; Nawiyanto and Capili, 2023).

Between 1870 and the 1930s, Indonesia ranked second globally in sugar production and export, trailing only behind Cuba. In 1930, Java's exports reached approximately 2,222,000 tonnes, out of a global documented export of 12,330,000 tones (Absell, 2022; Knight, 2000). The colonial Indonesia spearheaded the modernization of its sugar sector through new sugar cane varieties and modern processing equipment. This initiative led to the adoption of colonial Indonesia's sugar development practices by several sugar-producing countries, including the Philippines and Taiwan (Knight, 2010). Nitobe Inazo, the architect of modern sugar industry in Taiwan was reported to have visited Java to observe the sugar industry (Iijima, 2019). Various Asian nations, such as the Philippines and Taiwan, emerged as significant sugar producers and

exporters during the early 20th century (Galloway, 2005).

Improved sugar productivity also brought positive impacts to farmers and their families, offering higher income compared to food crop cultivation. Returns from sugar production for indigenous populations were more than double the gross value from other farm productions (Van der Eng, 1993). Among plantation commodities, sugar generated the highest real returns on investment between 1919 and 1936, surpassing tobacco, coffee, tea, and rubber (Buelens and Frankema, 2016). Nationally, increased sugar productivity drove economic growth, enhancing the competitiveness of the sugar industry and fostering job creation in sugar-producing regions. The economic boom of colonial Indonesia, particularly in Java during the 1920s, was closely tied to the remarkable performance of the sugar industry (Van Zanden and Marks, 2012). Regionally, enhanced sugar productivity facilitated economic integration and trade among Asia-Pacific countries and beyond, with surplus sugar production meeting the demands of other regions, including mainland China, Japan, British India, and the USA. Internationally, improved sugar productivity influenced global sugar markets, stabilizing prices and reducing dependence on imports from single sugar-producing countries. Additionally, it contributed to sustainable development goals by promoting efficient resource utilization and reducing environmental impacts associated with sugar cultivation. Overall, enhanced sugar productivity has yielded significant socio-economic benefits at various levels, contributing to the prosperity and well-being of nations and regions worldwide.

The rich information on various aspects of sugar cultivation documented in the ISRI archives collection provide invaluable source of knowledge on commodity that has shaped the Asia-Pacific region and the world beyond, its economy and society for centuries. The documentary heritage has been created through a long process of scientific research and collaborations. It involved the worldwide networks of materials, site-based knowledge and ideas exchanges among researchers in the sugar producing countries.

8.2 Form and Style Significance

Is the document an outstanding example of its type?

This criterion refers to the physical nature of the documentary heritage. Is the documentary heritage a particularly fine exemplar of its type; does it have outstanding qualities of beauty and craftsmanship; is it a new or unusual type of carrier or is it an example of a type of document that is now obsolete or superseded?

The types of documents collected in the ISRI Archives mark the era when plantations, especially the sugar industry, grew to become a pillar of the economy. Physically, the archives and the information stored in them are markers of the development, heyday, and decline of the sugar industry in Indonesia. In each sugar factory itself the existence of the archives is no longer found due to the poor and haphazard storage and management of records during the independence revolution and after.

8.3 Social Community or Spiritual Significance

Is the documentary heritage attached to a specific existing community and demonstrably significant? Information should be provided on what the nominated item represents and how this attachment is expressed. If there are any, ensure to mention any relation to Gender, Indigenous and other minority or marginalised groups.

The social significance of the ISRI Archives is related to the plantation research community that still exists today. The development of sugar plantations and their ups and downs are closely related to the existence of research institutions and communities. Research and development carried out by ISRI has been an important pillar that has supported the progress of the sugar industry for a long time. Another significance of the ISRI archive is related to the farming communities in Indonesia who were involved in the sugar industry sector through the land and labor they owned from the colonial period to the time of independence. The ISRI archives are also evidence of the historical role, involvement and contribution of the farming community in the production process of commercial commodities for global and national markets, as well as in the development of the national economy. The ISRI Archives also indicate the contribution of female researchers in scientific research from the colonial era. There are also documents indicating the contribution of sugar planters to the religious minority group. The construction of Catholic church in Pasuruan was financially supported by a sugar planter, Alexander Manuel Anthonys.

The Indonesian sugar archives clearly serve as invaluable repositories of historical knowledge and cultural heritage, contributing significantly to contemporary society in various ways. These archives provide insights into the rich history of sugar cultivation, shedding light on the country's agricultural development, economic growth, and societal changes over the centuries. By documenting the practices, challenges, and innovations of the sugar industry, these archives offer valuable lessons and perspectives for modern agricultural practices, policy-making, and sustainable development initiatives. Moreover, they help preserve and promote Indonesia's cultural identity, highlighting the traditions, craftsmanship, and social dynamics associated with sugar production. Furthermore, the accessibility of these archives has facilitated research, education, and public engagement, fostering a deeper understanding and appreciation of

Indonesia's history and heritage among scholars, students, and the general public alike. In essence, the Indonesian sugar archives play a crucial role in shaping contemporary society by bridging the past with the present and informing future endeavours in agriculture, economy, and cultural preservation.

9 Regional Significance: Comparative criteria

The item or collection should be compared to similar items or collections, whether on any of the Memory of the World registers or not. The comparison should outline the similarities between the nominated documentary heritage has with others as well as the differences, and the reasons that make the nominated documentary heritage stand out. The comparative analysis should aim to explain the importance of the nominated documentary heritage in its national, regional and even international context (if applicable). Consulting successful inscriptions to both regional and international registers is highly encouraged for this endeavour in order to ascertain and demonstrate uniqueness or intercultural connections.

The purpose of the comparative analysis is to show that the nominator has tried to find any existing duplicates or other similar examples of the item or collection, and to demonstrate that there is room for this item or collection to be included on the MOWCAP Regional Register.

9.1 Uniqueness or Rarity

Provide the results of the comparative analysis. Can the documentary heritage be described as unique (the only one of its kind ever created) or rare (one of a few survivors from a larger number)?

Sugar archives collections also exist in other sugar-producing countries, but The Indonesian Sugar Archives show uniqueness, apart from similarities. The existence of the sugar archives in Indonesia and elsewhere indicate the importance of scientific research as the pillar of the world's sugar industry especially from the last decades of the 19th century. Sugar crisis in the mid- 1880s induced by the widespread *sereh* disease was the main impetus for the world's sugar industries to base their operations on scientific research. The role of sugar research institutes in providing practical solutions and scientific understanding of various aspects the sugarcane cultivation had been growing ever since. Moreover, the fact that there were international meetings regularly held from the colonial era and most of the world's sugar producing countries participated in the events, some archives particularly in the form of congress proceedings are also kept not only as part of The Indonesian Sugar Archives but presumably found elsewhere as well.

Another major similarity relates to archival materials on sugar factory modernization. To make sugar industry more productive and efficient, improvements in sugar processing machinery in the sugar factories have been gradually made. The installments of modern equipment, such as rollers, vacuum pans, and centrifuges, in some sugar factories are well documented in the archival collection of the ISRI. The modernization of sugar processing machinery has also been an integral part of the development of sugar industry in the Philippines (Larkin,1993). Similar process has also been crucial in the impressive performance of Hawaiian sugar industry that was later adopted by Japan as a model for developing sugar industry in Taiwan (Iijima, 2019).

Despite the existing similarities, the documents of the Indonesian Sugar Research Institute are unique for several reasons. First, the documents were produced by one of the world's earliest sugar research institutes. The colonial Indonesia sugar research institutes were established in three different places, in West Java (1885), Central Java (1886), and East Java (1887). In other countries, for example Australia, sugar research institute (State Nursery) was established in 1889 and in the Philippines was established in 1951. The establishment of research institute was initially in response to the outbreak of sugarcane-attacking *sereh* disease appeared in early 1880s. The issue became the main concern of the research institutes in Java (Indonesia) and Barbados

leading to sugarcane breeding program in Java in 1886. Research by Dr. Soltwedel on sugarcane seeds and their germination in 1887 provided important information about sugar flowering, which laid the foundations for sugarcane breeding programs vital to many sugar producing countries in the period 1888-1925.

Second, its uniqueness relates to diversity of research. The archival collection of ISRI encompasses a wide range of research materials related to sugarcane cultivation, processing, and innovation specific to the country's unique environmental and socio-economic conditions. Unlike in the Philippines, for example, where sugar industry operated in areas abundant with lands, in Indonesia sugar industry operated under land constraint. Sugar industry used the same lands in rotation with farm agriculture devoted to food crops cultivation. In terms of plantation workers, sugar industry in Indonesia relied almost exclusively on the surrounding villagers, while in the Philippines plantation workers were recruited from other places. Intensive research on many aspects of sugar cultivation were seen as vital to improve the performance of sugar industry in Indonesia, while in the Philippines the focus of research was more limited to manufacturing aspect and seedlings research for a long time received little attention. The diversity of research reflects the various challenges and opportunities faced by Indonesia's sugar industry over time. This context offers valuable insights into the socio-economic impacts of sugar production and the dynamics of labor relations throughout Indonesian history.

Third, the archival materials of the ISRI are primarily written in Dutch and Indonesian, offering a unique linguistic perspective compared to collections from predominantly English or Spanish-speaking regions like the Philippines, Hawaii, Barbados, and Cuba. This linguistic diversity enriches the comprehensiveness of the collection for researchers and scholars interested in Indonesian sugar industry. Furthermore, the archives collection has been produced along its existence under the leadership of directors with various backgrounds, not only the Dutch and German, but also Japanese, Chinese, and Indonesian figures. The diverse leadership of the sugar research institute reflect contributions have been made by various parties, reflecting not only its uniqueness and strengthening the spirit of multi-nations collaboration.

Fourth, the Indonesian Sugar Archives illustrate how the process of building sugar industry with scientific foundations. They represent the complete collections on both practical and fundamental issues, knowledge and experience regarding sugar industry. Many aspects of the sugarcane cultivation and manufacturing were investigated and documented meticulously. The research findings were tested on fields by sugar factories on their lands with different ecological conditions. The archival collection of ISRI reveal insights into Indonesia's contributions to global sugar research and its collaborations with international institutions and researchers. This perspective highlights Indonesia's role in the broader context of global agricultural development and knowledge exchange.

10 Gender

Gender equality is one of two global priorities of UNESCO. If there are any specific aspects of the nomination that relate to gender equality, please describe them in detail, explaining what the nominated documentary heritage tells us about the lives of women and girls in Asia and the Pacific, and any impacts on women and girls or on gender equality in the region.

Year 2024	Indonesian Sugar Research Institute's Archives	Page no.

Historical archives records much about European women as housewives and indigenous women as servants and plantation workers. Little is known beyond these occupations. The Indonesian Sugar Archives kept under the ISRI archives collection shed a new light of the role of European women in scientific research. There were a few female scientists working for the colonial sugar research institute in the Netherlands East Indies, despite they remained small in number. Among them was Ir. G.A. Neeb working at the soil research division to draw maps of soil types for various sugar factories (Photo Archive of ISRI Library, link: https://bit.ly/fotoP3GI). One of the main findings by Neeb related to phosphate fertilization applied to black and grey soils (ISRI 1997:15). Another female researcher was Miss van de Kreke who worked in the analytical laboratory and worked on auxiliary agents (*Handelingen van het Vijfde Nederlandsch Indische Natuurwetenschappelijk Congres, Soerabaja 1928*). There was also a prominent researcher Gerharda Wilbrink (1875-1962), a Dutch plant pathologist working on sugar cane diseases in Java. She published on this topic during 1920s and designed a widely known medium for growing bacteria called Wilbrink's Medium. In 1923 Wilbrink proved that the causal agent of *Blendok* (Leaf Scald) disease could eliminated by treating seed cuttings with hot water at 52 C degrees for 30 minutes. Wilbrink also identified the corn leaf aphid as the most important vector of the mosaic disease attacking sugarcane (ISRI 1997:18).

The ISRI archives provide adequate evidence on the role of female scientists in the advancements of the scientific research on sugarcane in colonial Indonesia, thus proving wrong the absence of female scientists in colonial Indonesia.

11 Statement of Significance

Provide a summary of the points made under the primary and comparative criteria, and the test of authenticity and integrity. Why is the documentary heritage important to the world and what has its impact been beyond the boundaries of a single Asia Pacific state?

The summary should be about 300-600 words

Sugar commodity is often associated with tight competition among the world's sugar producing countries. In contrast to such a portrait, the world's sugar research has been a story of an international collaboration. The Indonesian Sugar Archives document the scientific collaboration and exchanges of knowledge to promote sugarcane into a worldwide commercial commodity. The sweetness of world civilization presented by sugar commodity cannot be separated from the role of Indonesian Sugar Research Institute (ISRI/P3GI) which had supported scientifically the sugar industry operations from the Netherlands East Indies era.

The Indonesian Sugar Archives are an outstanding example of historical documents showing the importance of scientific research in the development of science and technology in the sugar sector, from sugar cultivation to sugar manufacturing. Indonesia's ecological conditions from the aspects of land, rainfall, wind, sunlight, irrigation water, sugarcane pests and diseases and various scientific experiments have contributed to the production of knowledge about sugarcane and its cultivation. One of the greatest achievements of the ISRI was the discovery of wonder cane (POJ 2878), a highly-yielding sugarcane variety with strong resistance against the notorious sereh disease, which boosted sugar production and provided parent sugarcane for commercial varieties in the Asia-Pacific region.

The achievements of the ISRI indicate the importance of scientific research on sugar, which were carried out not only on the basis of local environmental conditions, but also involving continuous exchanges of materials, site-based knowledge and ideas among sugar producing countries in the Asia-Pacific region. The ISRI Archives and archives of this kind that possibly exist in other Asia-Pacific countries have a great potential to become research materials in order to understand climate change and adaptations in the region across time and geographical variations.

Apart from recording the sugar-related research activities, the ISRI archives collection is invaluable heritage because the documents keep collective memory that records the involvement of Indonesian sugar research institutes in exchanging materials, ideas and scientific findings regarding various aspects of sugar in the global network. The broad scientific network and exchange among the sugar producing countries such as Australia, the United States, Cuba, Puerto Rico, the Philippines, India and several other countries has promoted sugarcane into a worldwide commercial commodity that shaped the history of the Asia-Pacific region and beyond

The Indonesian Sugar Archives are an important part of the Asia-Pacific memory that records the extensive scientific activities supporting the region's sugar-based economy and society. The loss of this archive collection will reduce the invaluable wealth of the region's collective memory and obscure the traces marking the socio-economic transformation of the Asia-Pacific societies. It will also lead us to easily forget the importance of international collaborative efforts to succeed in promoting sugar as a sweetening commodity of the world civilization.

12 Risk Assessment

12.1 Condition

Describe the physical condition of the Nominated Archives

Most of the ISRI Archives are still intact. Some or about 15% is easily brittle. However, information from these archives can be accessed both physically and in terms of information. Most of the P3GI archive collections at the Library and Archives Office of East Java Province are still physically accessible, but many of the ISRI archives are in a very fragile condition due to age. Some archives cannot be opened because of the stickiness between one sheet and another so that when opened they are very vulnerable to tearing. Some of the writing is no longer legible so it is difficult to know what the contents of the information recorded in the archive are.

Meanwhile, the archives at the Indonesian Sugar Research Center Institute are in relatively good condition, but some are fragile. All archives are stored in the ISRI Library.

12.2 Threat/Risk

P3GI's archives stored in the Archives Depot of the Library and Archives Office of East Java Province are very at risk of weather changes, because they are in a tropical area. Therefore, we strives to carry out preservation activities in a sustainable manner, both preventively and curatively.

In order to save the physical and archive information of ISRI, efforts have been made to save and preserve it through the following actions:

- Fumigation of the archive depot 2 (two) times a year for sterilization of archive destroying biota factors.
- The lamination on the files is damaged.
- Rebinding of archives in book form.
- Paper acid removal
- Wrapping, packing and arrangement of archive shelves.
- Media transfer/digitization and archive authentication.
- Input archive data into the Archival and National Information System (SIKN), so that it can be accessed by the public in the National Archival Information Network (JIKN)

We realize that the archives we submit in the MOWCAP are not fully guaranteed to be free from potential damage and security. This is because the depot where archives are kept at the Library and Archives Office of East Java Province until now has not fully complied with the minimum standards for a national depot. Even the volume that must be restored is very large, so it requires a lot of funding to be fulfilled independently by the Library and Archives Office of East Java Province.

13 Preservation and Access Management Plan

Management Plan

Are there management plans to preserve and provide access to the nominated documentary heritage?

YES NO

If YES, describe or attach a summary of the plan or plans.

In order to save archives, including the ISRI archives, the Library and Archives Office of East Java Province strives continuously every year to plan, develop programs, activities that are directly related to the archive preservation process.

Programs, activities, even sub-activities that are directly related to the preservation of ISRI archives have been accommodated in the 2023 regional development budget and previous years. The following plans and actions in the preservation of archives are presented as follows:

1. Archive preservation budget.

Program: 2.24.02 PROGRAM MANAGEMENT OF ARCHIVES

Activity: 2.24.02.1.02 Provincial Regional Archive Management

Sub-Activity: 2.24.02.1.02.02 Acquisition, Processing, Preservation and Access toArchives

2. Archive infrastructure and facilities.

Archives are stored in the Archives Depot of the Library and Archives Office of East Java Province Jl. Jagir Wonokromo 350 Surabaya, wrapped in acid-free paper, put in a filing box, stored in a roll op pact, and equipped with humidity measurement facilities and storage temperature settings.

3. Competence of human resources in Archive management.

The archives are managed by 17 (seventeen) archivists (experts and skilled), 1 (one) restoration institution, 1 (one) reproduction institution and are supported by staff of 3 (three) general practitioners who have been trained and apprenticed to archive restoration at RI National Archives.

4. Improving the quality of offline and online access services

Offline services are carried out and served in the archive service room of the Library and Archives Office of East Java Province, Jl. Jagir Wonokromo No. 350 Surabaya. Online services are carried out by utilizing the National Archival Information System and the National Archival Information Network (SIKN/JIKN) with addresses http://sikn.jatimprov.go.id/

5. Dissemination

To socialize the archives that are stored and managed by Library and Archives Office of East Java Province, it is carried out through the following actions:

- Publication of stored archives;
- Creating a archive guide on research on sugar plantations;
- Educational services for archive users targeting universities in East Java;
- Restoration apprenticeship service for colleger in East Java;

- Free Learning Campus Independent (MBKM) program services in collaboration with several Universities in East Java.

If NO, provide details about any proposed preservation, storage and access strategies and plans.

Is there a disaster risk management plan in place to support the preservation and safeguarding of the nominated documentary heritage?

YES *NO*

If YES, describe or attach a summary of the disaster risk management plan or plans (if not included in the management plan).

The archives proposed in the MOWCAP program have the potential to be damaged, either due to weather, potential disasters or factors that destroy biota and even humans. To anticipate the possibility of a disaster as mentioned above, ISRI's archives are stored in a archive depot built by the Office of Public Works Cipta Karya, East Java Province on the 2nd floor using a gas sprinkler fire extinguishing system and other fire extinguishing facilities.

If NO, provide details about any proposed disaster risk management strategies and plans. This is an opportunity to express any needs for technical support/assistance.

14 Consultation with Stakeholders

Provide details of consultation with stakeholders about this nomination. Stakeholders include communities with an involvement in the documentary heritage, owners and custodians of the documentary heritage and scholars who research the documentary heritage

Consultations regarding the plan to propose the ISRI archives were carried out with several stakeholders.

1. Archive Owner, P3GI. Consultations and coordination with archive owners were carried out on August 30, 2022. Some of the results of the consultation include:
   a. The Indonesian Sugar Research Institute (ISRI/P3GI) responded positively, appreciated and fully supported the Library and Archives Office of East Java Province's plan to register P3GI archives in the MOWCAP program;
   b. Registration of the ISRI archive is expected to increase the government's attention to the important and strategic role of ISRI, so that it can take part in returning to the golden age of the sugar and cane industry in Indonesia.
   c. ISRI is ready to help provide explanations regarding the archives that have been handed over to the Provincial Government.
2. Scholars/Experts. Consultations and coordination with Scholars/Experts, especially experts in history or historians, are carried out continuously and continuously, either through zoom meetings, through telephone communication devices or face to face
   a. Prof. Nawiyanto, MA., Ph.D., strongly supports the intention of the Library and Archives Office of East Java Province in registering P3GI archives in MOWCAP, because these archives have significance and high information value at the international level, especially those related to socio-economic history.
   b. Dr. Larissa Nordholt, strongly support because ISRI archives, relating to the history of sugar research and production, contain valuable and unique information that may help future researchers come to a better understanding of the environmental history of Southeast Asia
3. Community
   Consultations were also carried out with the East Java Regional Management of the Association of Indonesian Archivists (AAI). AAI East Java fully supports the plan to propose the archives in the MOWCAP program. The inscription of the ISRI archives to MOW would ensure that the collection will remain protected in the best way possible for present and future generations.

15 Other Information to Support the Nomination

Please provide any other information that supports the inclusion of this documentary heritage collection on the Memory of the World Asia Pacific Regional Register.

Check List

☐ MOWCAP website reviewed

PROEFSTATION OOST-JAVA

MUSEUM

1.