To Norges Bank

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Recommendation to place PT Semen Indonesia (Persero) Tbk under observation

Summary

The Council on Ethics recommends that PT Semen Indonesia (Persero) Tbk (SIG) be placed under observation for a period of three years pursuant to the ethical guidelines' criterion concerning "other particularly serious violations of fundamental ethical norms". The Council's recommendation rests on the risk of damage to prehistoric and especially important cultural heritage sites in the Maros-Pangkep karst landscape in South Sulawesi, Indonesia. The importance of protecting humanity's cultural heritage is expressed in several international conventions and guidelines.

SIG is Indonesia's largest producer of cement. Through its subsidiary, PT Semen Tonasa, the company operates a limestone quarry, a clay pit and four cement factories in the Maros-Pangkep area.

Some of the oldest rock art in the world is to be found in the Maros-Pangkep region's karst landscape. One of the caves, which was discovered by scientists in 2017, contains the world's oldest figurative cave art, a hunting scene found to be at least 43,900 years old. The significance of the rock art in Maros-Pangkep lies not merely in its antiquity, but also in its importance for our understanding of the symbolic thinking of early modern humans.

With the assistance of experts, the Council has investigated the risk of Semen Tonasa's activities damaging the rock art. The investigation identified a total of 40 locations containing rock art and archaeological sites inside or adjacent to the areas in which Semen Tonasa holds mining concessions. Semen

The rock art is in the process of deterioration. Climate change, driven by human activity, seems to be an important factor. There is no clear evidence that the company's activity is harming the rock art, but the company's activity increases the risk. Semen Tonasa has no systematic monitoring of rock art sites which provides a basis for assessing the activities' impact on the rock art. The lack of a clear risk picture is due to weak underlying data and inadequate monitoring of the sites. The Council considers that a lack of oversight over the impact of the company's operations constitutes a significant risk, given the outstanding cultural heritage which the rock art represents. Without adequate steps to identify risks and implement necessary measures, the Council considers the risk that the company's operations may damage examples of irreplaceable cultural heritage to be unacceptable.

SIG and Semen Tonasa have disclosed that they have implemented numerous measures to protect the cultural heritage. This includes reducing the sites' exposure to dust and vibration, and intensifying their monitoring. The company further states that it is committed to protect all cultural heritage sites and that it will draw up a plan for the management of cultural heritage in its concessions in

partnership with experts in the field. It therefore appears as though the company now wants to take a more systematic approach to the management of the cultural heritage.

The Council on Ethics considers that the company must take particular responsibility for ensuring that Semen Tonasa's activities do not contribute to the destruction of the rock art, given the outstanding global significance of the cultural heritage it represents. This responsibility also extends to the protection of cultural heritage as yet undiscovered. As the company does not appear to have implemented previously recommended measures concerning the protection of cultural heritage sites in its concession areas and the measures are still in the planning stage, the Council recommends that SIG be placed under observation in order to monitor the implementation of these measures.

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1 Introduction

The Council on Ethics has assessed the Norwegian Government Pension Fund Global's investments in PT Semen Indonesia Persero Tbk, also known as Semen Indonesia Group (SIG),[1] against the Guidelines for Observation and Exclusion of Companies from the Government Pension Fund Global (ethical guidelines).[2] The recommendation concerns the risk of damage to prehistoric and particularly important cultural heritage.

SIG is Indonesia's largest cement manufacturer. In addition to cement production itself, the company also quarries limestone and clay, and packages and distributes cement. Through its subsidiaries, the company has nine integrated cement factories, seven ports, six cement mills and 32 packaging plants. SIG owns 24 mining concessions in Indonesia. In 2020, SIG had close to 7,600 employees.[3]

The company is listed on the Jakarta Stock Exchange. The Indonesian state owns 51 per cent of the company's shares. At the end of 2021, the Government Pension Fund Global (GPFG) owned 1.25 per cent of SIG's shares, worth approximately USD 38 million.

1.1 What the Council on Ethics has considered

The Council has assessed whether there is an unacceptable risk of SIG contributing to particularly serious violations of fundamental ethical norms pursuant to section 4(f) of the ethical guidelines. This criterion can in principle be applied to any breach of standards not specified in one of the guidelines' other criteria, but which is equally serious. [4]

In this case, the Council has assessed the risk of the company's wholly owned subsidiary, PT Semen Tonasa, adversely impacting prehistoric rock art and archaeological sites through its operations in the Maros-Pangkep area of Sulawesi, Indonesia. The Council has emphasised the significance of the cultural heritage at risk of being damaged and whether the company's actions to prevent

[1] Issuer ID:117955.

[2] Guidelines for Observation and Exclusion of Companies from the Government Pension Fund Global, https://www.regjeringen.no/contentassets/9d68c55c272c41e99f0bf45d24397d8c/2022.09.05_gpfg_guidelines_observation_exclusion.pdf.

[3] SIG Annual Report 2021, https://sig.id/wp-content/uploads/2022/03/AR-SIG-2021-Bilingual-R1.pdf.

[4] NOU 2020:7 Values and Responsibility — The Ethical Framework for the Norwegian Government Pension Fund Global, https://www.regjeringen.no/en/dokumenter/nou-2020-7/id2706536/.

or mitigate adverse impacts at the sites are sufficient to ensure their long-term protection.

The importance of protecting cultural heritage is expressed in several international conventions and guidelines. The establishment of the United Nations Educational, Scientific and Cultural Organization (UNESCO),[5] as well as the Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention),[6] demonstrates the importance of preserving and protecting our shared cultural heritage. The importance of such protection is also expressed in the 1954 Haag Convention for the Protection of Cultural Property in the Event of Armed Conflict, which states in its preamble that "preservation of the cultural heritage is of great importance for all peoples of the world and that it is important that this heritage should receive international protection".[7] In 2016, the UN Human Rights Council adopted a resolution establishing that "damage to cultural heritage, both tangible and intangible, of any people constitutes damage to the cultural heritage of humanity as a whole".[8]

In June 2021, the International Criminal Court issued its policy on cultural heritage, which notes "that cultural heritage belonging to peoples constitutes a unique and important testimony of the culture and identities of peoples and that the degradation and destruction of cultural heritage – whether tangible or intangible – constitutes a loss to the international community as a whole".[9]

While primary responsibility for protection of cultural heritage sites lies with states, corporations' acts or omissions may contribute to the damage or destruction of such sites. Companies' possible adverse impacts on cultural heritage is addressed in the OECD's due diligence guidance[10] and complaints procedures.[11] In its assessment of companies' acts and omissions, the Council has also found guidance in the International Finance Corporation's (IFC)

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[5] UNESCO Convention, Article 1 http://portal.unesco.org/en/ev.php-URL_ID=15244&URL_DO=DO_TOPIC&URL_SECTION=201.html.

[6] Convention Concerning the Protection of the World Cultural and Natural Heritage, https://whc.unesco.org/en/conventiontext/.

[7] 1954 Convention for the Protection of Cultural Property in the Event of Armed Conflict, https://en.unesco.org/protecting-heritage/convention-and-protocols/1954-convention.

[8] A/HRC/RES/33/20 - E - A/HRC/RES/33/20 -Desktop (undocs.org).

[9] International Criminal Court, Office of the Prosecutor, June 2021, Policy in Cultural Heritage, https://www.icc-cpi.int/sites/default/files/itemsDocuments/20210614-otp-policy-cultural-heritage-eng.pdf.

[10] OECD Due Diligence Guidance for Meaningful Stakeholder Engagement in the Extractive Sector, p 46, https://www.oecd-ilibrary.org/governance/oecd-due-diligence-guidance-for-meaningful-stakeholder-engagement-in-the-extractive-sector_9789264252462-en, and OECD Legal Instruments, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0393.

[11] The Dutch National Contact Point 2018, Final Statement NCP specific instance FIVAS and Hasankeyf NGO's vs Bresser, https://www.oecdguidelines.nl/latest/news/2018/08/20/fs-fivas-the-initiative-to-keep-hasankeyf-alive-and-hasankeyf-matters-vs-bresser.

Performance Standard on Cultural Heritage.[12] Both the World Bank Performance Standards[13] and the Asian Development Bank Performance Standards have set out similar principles and requirements for protecting cultural heritage.[14]

1.2 *IFC Performance Standard on Cultural Heritage*

IFC Performance Standards for Environmental and Social Sustainability establish companies' responsibilities for managing their environmental and social risks.[15] Consistent with the World Heritage Convention, Performance Standard 8 recognises the importance of cultural heritage and provides guidance on how companies should protect cultural heritage in their business operations. The standard contains two objectives:

- to protect cultural heritage from the adverse impacts of project activities and support its preservation; and
- to promote the equitable sharing of benefits from the use of cultural heritage

The guidance notes to the standard define cultural heritage as "tangible forms of cultural heritage, such as tangible property and sites having archaeological (prehistoric), paleontological, historical, cultural, artistic, and religious values, as well as unique natural environmental features that embody cultural values, such as sacred groves."

The standard is designed to help companies identify risks to and impacts on cultural heritage, and to avoid, mitigate, and manage those risks and impacts. It requires companies to protect and support cultural heritage by applying internationally recognised practices for the protection, field-studies and documentation of cultural heritage. Stakeholder engagement is an important feature of this process.[16]

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[12] IFC Performance standard 8, https://www.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/Sustainability-At-IFC/Policies-Standards/Performance-Standards.

[13] World Bank Performance Standards for Private Sector Activities, Environmental and Social Framework (ESF), which includes the Environmental and Social Standard 8 – Cultural Heritage, http://web.worldbank.org/archive/website01541/WEB/0__C-116.HTM.

[14] ADB 2009, Safeguard Policy statement, https://www.adb.org/sites/default/files/institutional-document/32056/safeguard-policy-statement-june2009.pdf, and ADB 2021, Summary of the Analytical Study
for the Safeguard Policy Review and Update: Cultural Heritage, https://www.adb.org/sites/default/files/institutional-document/800726/spru-analytical-study-summary-cultural-heritage-draft.pdf.

[15] IFC Performance standard 8.

[16] The guidance notes define an 'internationally recognized practice' as: "the exercise of professional skill, knowledge, diligence, prudence and foresight that would reasonably be

In locations where cultural heritage is expected to be found, companies should have procedures in place to manage and protect previously unknown heritage which is identified during their operations (chance-find procedures).

2 Sources

This recommendation is based primarily on a study commissioned by the Council. The study was carried out by rock art experts for the purpose of assessing the potential risk of Semen Tonasa's mining activities adversely impacting important rock art and cave sites in and near the company's areas of operation.[17] In June 2022, the consultants visited Pangkep and held meetings with the company, local authorities and stakeholders, among others.

In addition, academic literature and media articles concerning the caves and the prehistoric rock art in the Maros-Pangkep area have been reviewed. The Council has also consulted the International Council on Monuments and Sites (ICOMOS)[18], scientists, and other international organisations with expertise in the field of rock art and cultural heritage.

SIG has provided information and facilitated the experts' visit to the site.

3 Background

3.1 The Maros-Pangkep area

The Maros-Pangkep area is the world's second largest karst landscape. It extends over 440 km^2 in the central part of South Sulawesi. [19] Karst is a type of landscape where the dissolving of the bedrock has created sinkholes, caves and other formations. Karst is associated with soluble rock types such as limestone, marble and gypsum. In Maros-Pangkep, the landscape is characterised by isolated karst

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expected from experienced professionals engaged in the same type of undertaking under the same or similar circumstances globally (GN12)," https://www.ifc.org/wps/wcm/connect/cce98f3d-f59e-488f-be59-6456c87d3366/Updated_GN8-2012.pdf?MOD=AJPERES&CVID=mRQk91V.

[17] Whincop, Matt and Tan, Noel Hidalgo: Archaeological Risk Assessment of Semen Tonasa's Operations at Maros Pangkep, Sulawesi, Indonesia, Prepared for the Council on Ethics, 15 July 2022.

[18] ICOMOS is a global non-government organisation "dedicated to promoting the application of theory, methodology, and scientific techniques to the conservation of the architectural and archaeological heritage." ICOMOS is an advisory body to the World Heritage Committee of UNESCO, https://www.icomos.org/en

[19] Duli, A. et al 2019, The Mapping out of Maros, -Pangkep Karst Forest as a Cultural Heritage Conservation IOP Conf. Ser.: Earth Environ. Sci. 270 012014, https://www.researchgate.net/publication/333057553_The_Mapping_Out_of_Maros-Pangkep_Karst_Forest_as_a_Cultural_Heritage_Conservation.

towers and plateau-like hills which range from 150 to 300 m in height and 1 to 10 km in diameter. It features a network of caves, many of which contain evidence of human occupation dating back tens of thousands of years.[20] This area of South Sulawesi has been the subject of archaeological investigations for nearly a century. Excavations in Sulawesi have revealed evidence for human habitation as early as 40,000–50,000 years ago.[21]

Some of the rock art of Maros-Pangkep has recently been dated as originating 45,500 years ago, and is considered the oldest figurative art in the world.[22] The caves contain hand stencils and figurative portrayal of animals. New sites are discovered every year. Many of these have revolutionised our understanding of early anatomically modern humans' behaviour. More than 300 caves and rock shelters in the area are now known to contain rock art.[23] As research continues in the region, more important rock art and archaeological sites are likely to be discovered.

In 2009, the Maros-Pangkep karst area was placed on UNESCO's tentative list of World Natural Heritage sites, based on its outstanding natural value, biodiversity and cultural heritage sites. According to the submission, the area has a rich biodiversity and provides a habitat for several endangered and endemic species, and contains important sources of groundwater. Although the submission mentions the presence of prehistoric caves that contain rock art, it focused primarily on the area's important natural features.[24]

The Maros-Pangkep region has recently been awarded UNESCO Global Geopark status.[25] The Geopark covers 5,800 km^2 and consists of a combination of

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[20] Huntley, J., et.al. 2021. The effects of climate change on the Pleistocene rock art of Sulawesi. Scientific Reports, 11:9833. (doi:https://doi.org/10.1038/s41598-021-87923-3); Brumm et al. 2018, 'A reassessment of the early archaeological record at Leang Burung 2, a Late Pleistocene rock-shelter site on the Indonesian island of Sulawesi'. *PLOS ONE* 13(8) (e0202357).

[21] Brumm et al. 2017, Early human symbolic behavior in the Late Pleistocene of Wallacea. *Proceedings of the National Academy of Science, USA* 114(16):4105–10.

[22] Aubert et al. 2019. Earliest hunting scene in prehistoric art. *Nature* 576:442-5. https://doi.org/10.1038/s41586-019-1806-y PMID: 31827284; Brumm et al. 2021. Oldest cave art found in Sulawesi. *Science Advances* 7(3): eabd4648. (https://doi.org/10.1126/sciadv.abd4648 PMID: 33523879).

[23] Brumm et al. 2021. 'Do Pleistocene rock paintings depict Sulawesi warty pigs (*Sus celebensis*) with a domestication character?' *Archaeology in Oceania* 56(3):149-172.

[24] The property was to be assessed under criterion ix which states "be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals." https://whc.unesco.org/en/tentativelists/5467/.

[25] UNESCO Global Geoparks are single unified geographical areas where sites and landscapes of international geological significance are managed with a holistic concept of protection, education and sustainable development. It must be managed by a body having legal existence recognized under national legislation that has a comprehensive management plan, covering

terrestrial and marine ecosystems. The Geopark is managed by the Maros-Pangkep Geopark Management Authority.

The protection and management of cultural heritage sites in Maros-Pangkep is regulated and overseen by South Sulawesi Province Cultural Heritage Centre *(Balai Pelestarian Cagar Budaya (BPCB))*. BPCB is responsible for the protection and management of the rock art and archaeological sites, including the monitoring of site conditions and potential impacts. According to BPCB, its database currently contains records for more than 500 cave sites in the Maros-Pangkep area.

3.2 PT Semen Tonasa's operations in Maros-Pangkep

Semen Tonasa's cement production facilities in Pangkep are located in Biringere, a village 55 km north of Makassar. Semen Tonasa was the first company to start mining operations in the Maros-Pangkep karst area in the late 1960s. Its operation includes a limestone quarry, a clay pit and four cement factories with a total production capacity close to 7.4 million tonnes of cement per year.[26] The company holds five mining concessions in the Pangkep Regency, two of which are operational. Semen Tonasa is also planning to develop a new concession in the karst landscape (see Figure 1 for its location).

A clay pit is located in Concession 1, where clay is extracted through the use of heavy machinery and equipment. No blasting occurs in the clay pit. The clay is transported to the factory via an unsealed road, which passes close to important heritage sites within the concession. The wider landscape is scattered with numerous disused clay pits that have since filled with water and today form small lakes. Clay extraction causes dust, vibration, pollution, surplus water, heavy traffic, and increased human presence.

A limestone quarry in Concession 2 involves the use of drilling, blasting and heavy plant and equipment to remove and transport the limestone deposits.

governance, development, communication, protection, infrastructure, finance, and partnership issues, https://en.unesco.org/global-geoparks and https://en.unesco.org/sites/default/files/intergov_check_english_2021_maros_pangkep_indonesia.pdf.

[26] SIG Annual Report 2021, https://sig.id/wp-content/uploads/2022/03/AR-SIG-2021-Bilingual-R1.pdf.

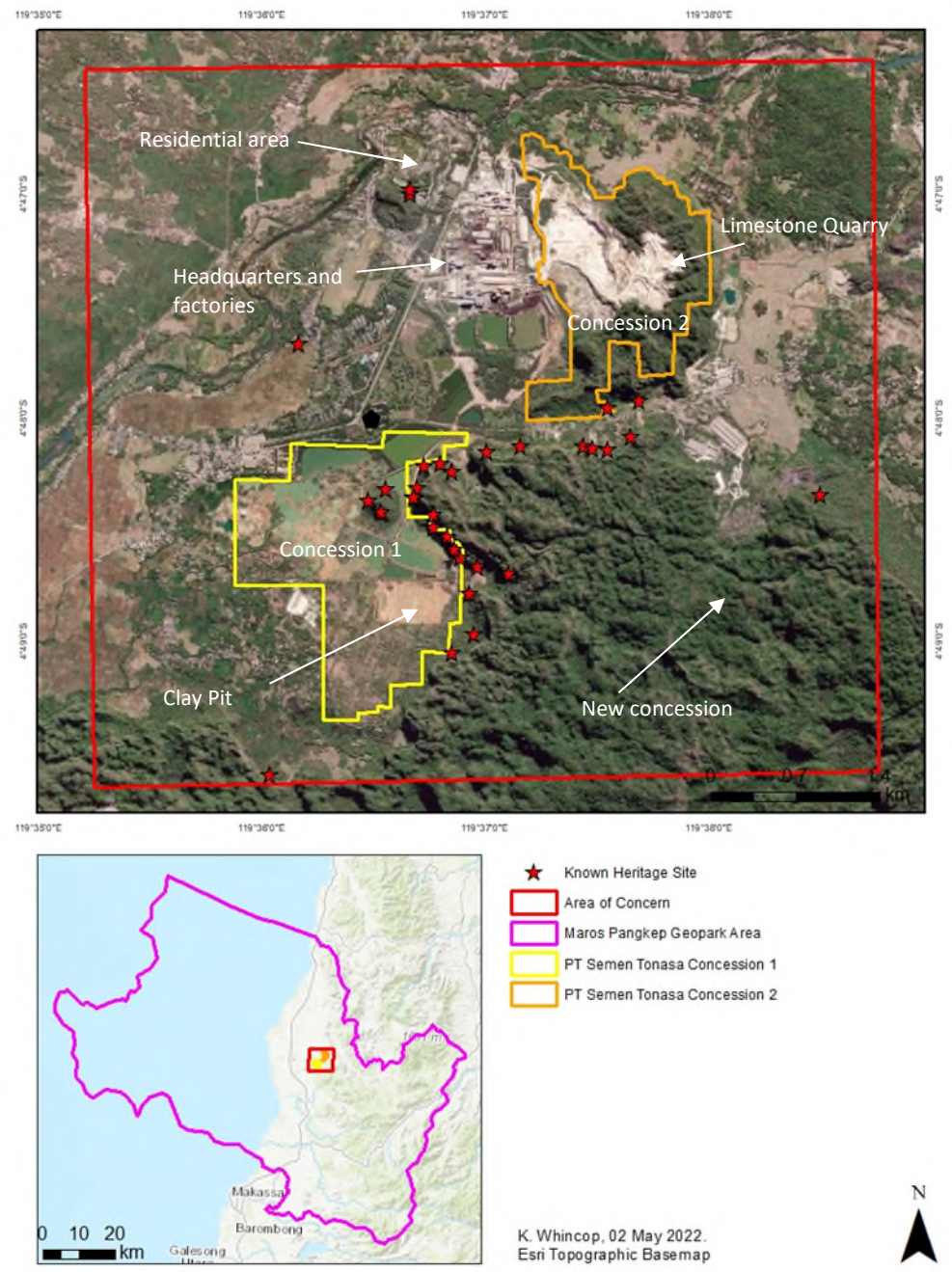

Figure 1: Location of PT Semen Tonasa's operational areas (upper image), approximate location of new concession (Bakka) and known heritage sites (red stars) within and close to the concessions. The pink line in the lower image shows the boundaries of the Geopark.

4 The Council on Ethics' findings

4.1 The rock art within Semen Tonasa's concessions

The study commissioned by the Council identified 40 archaeological sites within or close to Semen Tonasa's concession areas. Of these, 18 contain prehistoric rock art.

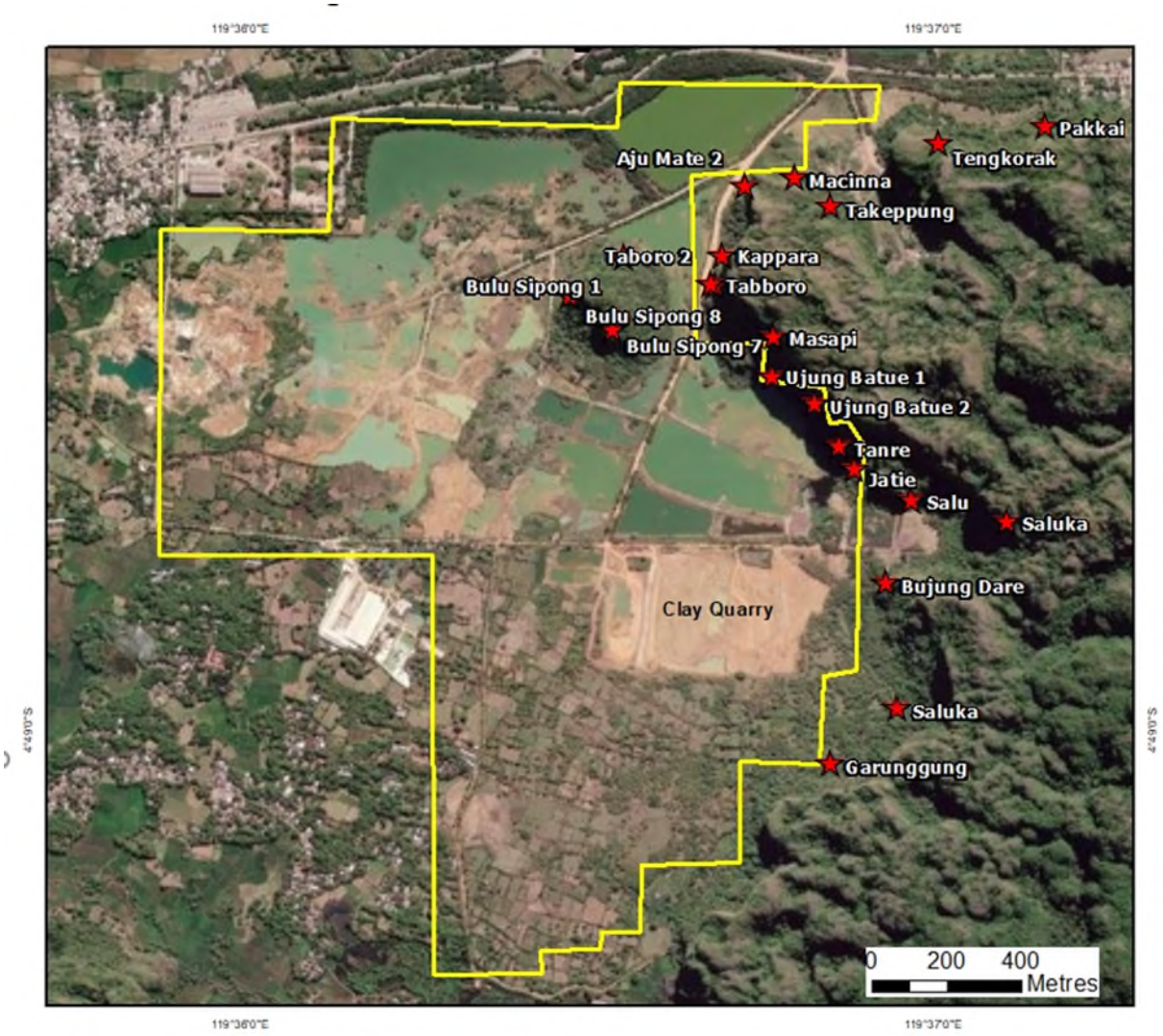

Figure 2: Known heritage sites in Semen Tonasa's Concession 1. Green patches are former clay pits which are now filled with water.

The limestone hill Bulu Sipong contains eight identified sites (numbered Bulu Sipong 1-8, not all marked in Figure 1), several of which contain rock art. Discovered in 2017, Bulu Sipong 4 contains a 4.5 m wide panel depicting several small dark-red humanoid figures apparently hunting Sulawesi warty pigs and anoas (dwarf buffalos). Some figures seem to be using long ropes to capture the animals. The painting of one of the pigs has been dated to be at least 43,900 years old.[27] Furthermore, researchers have concluded that the hunters in this scene are depicted as therianthropes, abstract beings that combine elements of both people and animals, and thereby embody an abstract symbolism.

[27] Aubert, M., Lebe, R., Oktaviana, A. A., Tang, M., Burhan, B., Hamrullah, Jusdi, A., Abdullah, Hakim, B., Zhao, J.-X., Geria, I. M., Sulistyarto, P. H., Sardi, R. and Brumm, A. 2019. Earliest hunting scene in prehistoric art. *Nature* 576:442-5. https://doi.org/10.1038/s41586-019-1806-y PMID: 31827284.

Figure 3: Detail of the rock panel in the Bulu Sipong 4 cave.[28]

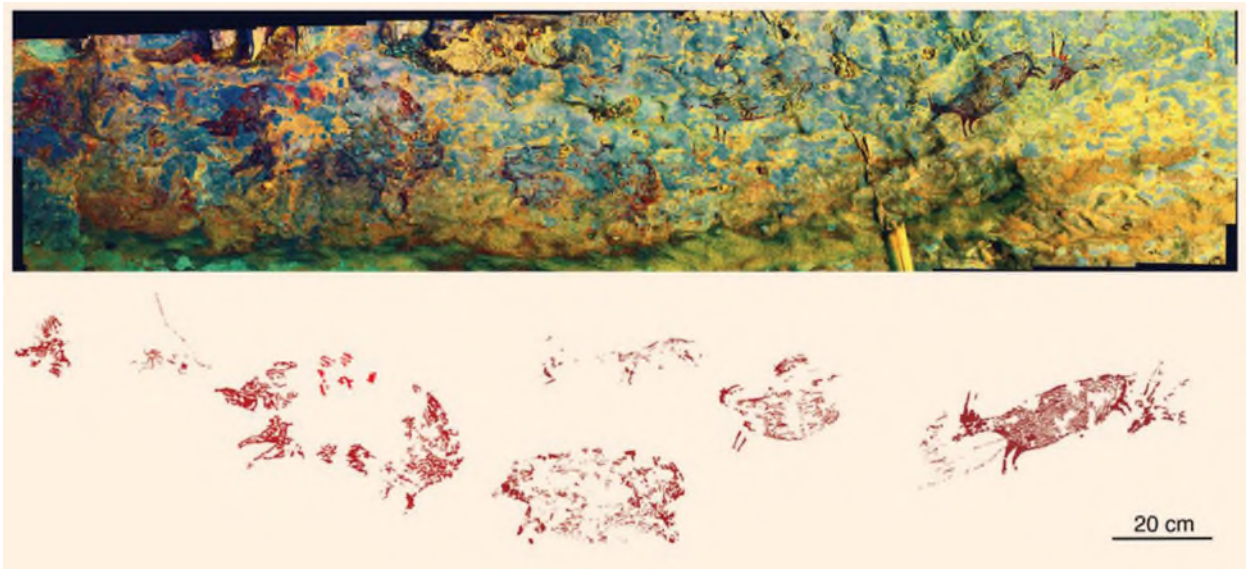

Figure 4: Hunting scene in Bulu Sipong 4: The top image shows a photo stitched panorama of the rock art panel; the bottom image is a digital tracing of the rock art scene.[28]

Figure 5 provides a clearer picture of the location of the Bulu Sipong cave in relation to Semen Tonasa's production areas. The image also shows the relatively untouched nature of the concession area that Semen Tonasa has not yet begun to develop.

[28] The images are from Aubert et al 2019.

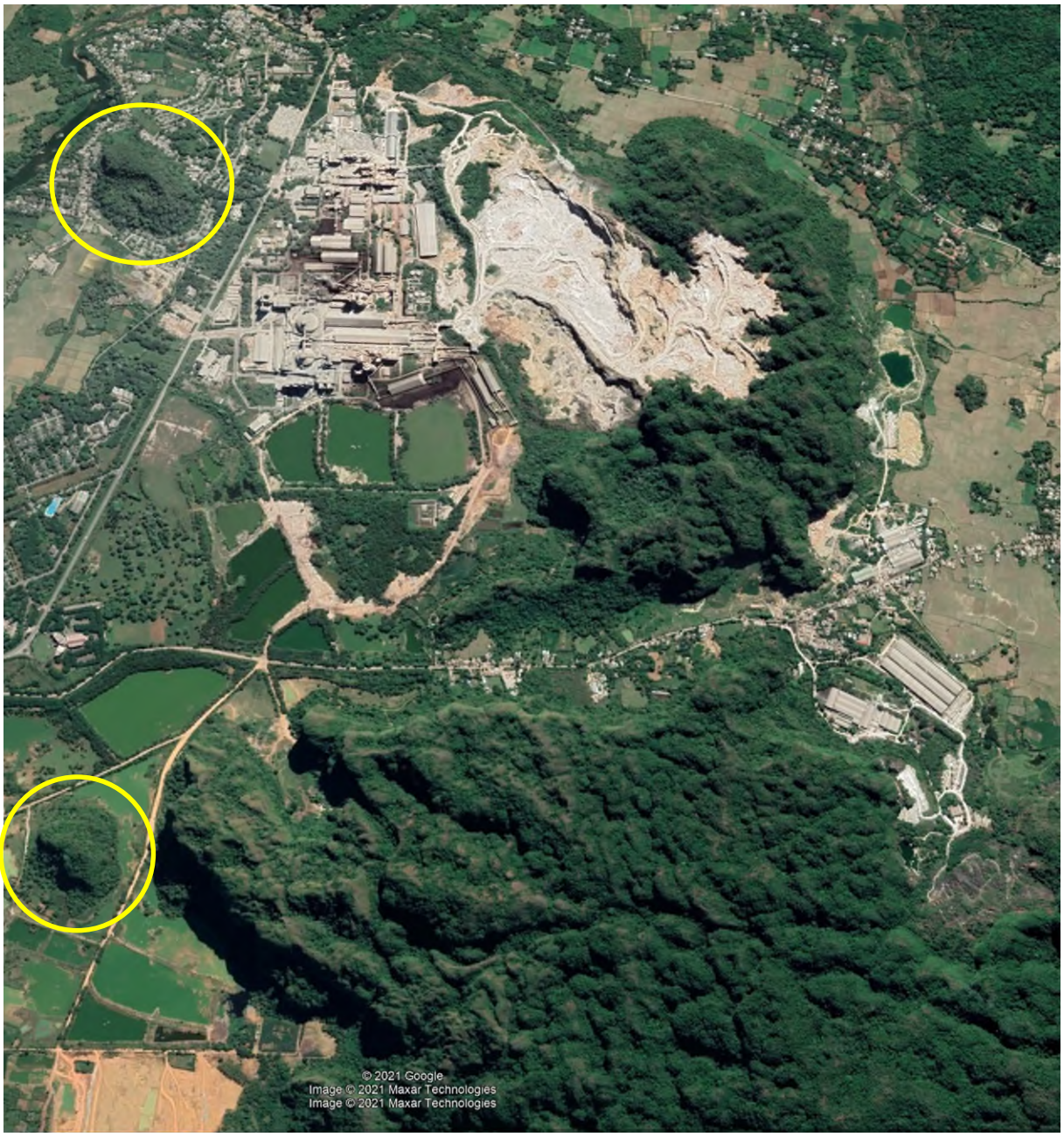

Figure 5: The location of the caves Biring Ere 1 and Biring Ere 2 (within the upper yellow circle) in the residential area of Semen Tonasa and the caves Bulu Sipong 1, 4, 7 and 8 (within the lower yellow circle) in Concession 1. The Google Earth image shows Semen Tonasa's production facility and limestone quarry. Part of the clay pit can be seen in the bottom left-hand corner. The new concession area, Bakka, which has not yet been developed, will largely overlap the forested area shown to the right of the clay pit.

4.2 The significance of the Maros-Pangkep rock art

The hunting scene in Bulu Sipong 4 is unique amongst the Maros-Pangkep rock art.[29] It is the earliest depiction of hunting yet known globally and predates the earliest figurative art in Europe.[30] While the specific meaning of these figures remains uncertain, they are clearly representative of symbolic expression and therefore of a leap in human cognitive development.[31] This challenges the conventional view that symbolic expression and abstract thought in our species originated in Europe, before being dispersed across the globe.[32] Instead, the similar form of the earliest painted motifs in Europe, Africa and Southeast Asia suggests that they are the product of a shared underlying behaviour, which probably developed prior to humanity's initial expansion out of Africa.[33]

The cave paintings in Maros-Pangkep show that rock art was practised at about the same time in Europe and Asia, and that an advanced artistic culture was already present in Sulawesi 44,000 years ago.[34] The significance of the Maros-Pangkep rock art lies in its important contribution to our understanding of early modern humans' symbolic behaviour.

The Council asked the International Council on Monuments and Sites (ICOMOS) to issue an opinion on the significance of the rock art.[35] ICOMOS stated that "the

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[29] In 2020, Science Magazine nominated the rock art in Leang Bulu 4 as one of the ten most significant breakthroughs in science in 2020, see Price, Michael; Breakthrough of the year 2020. Runners-Up, in *Science*, 18 December 2020, vol 370, Issue 6523, p. 1405. Also, National Geographic identified the rock art as one of the top 20 scientific discoveries of the decade in 2019, see Greshko, Michael, These are the top 20 scientific discoveries of the decade, Unveiling ancient art; https://www.nationalgeographic.com/science/article/top-20-scientific-discoveries-of-decade-2010s

[30] Aubert et al. 2014:226. Pleistocene cave art from Sulawesi, Indonesia. *Nature* 514:223–7. https://doi.org/10.1038/nature13422 PMID: 25297435. Aubert et al. 2019; Brumm et al. 2021. Oldest cave art found in Sulawesi. *Science Advances* 7(3): eabd4648, https://doi.org/10.1126/sciadv.abd4648 PMID: 33523879.

[31] Brumm et al. 2021. 'Earliest-Known Animal Cave Art', *Sapiens*, 5 February 2021, https://www.sapiens.org/archaeology/cave-paintings/.

[32] Taçon et al. 2014. 'The global implications of the early surviving rock art of greater Southeast Asia.' *Antiquity* 88(342):1050–1064. doi.org/10.1017/S0003598X00115315.

[33] Taçon et al. 2018. 'The contemporary importance and future of Sulawesi's ancient rock art,' *Terra Australis* 48:31-42.

[34] Aubert, M., Lebe, R., Oktaviana, A.A. *et al.* Earliest hunting scene in prehistoric art. *Nature* **576,** 442–445 (2019). https://doi.org/10.1038/s41586-019-1806-y and Brumm, A., Oktaviana, A. and Aubert, M. 2019, Indonesian cave paintings show the dawn of imaginative art and human spiritual belief, The Conversation, https://theconversation.com/indonesian-cave-paintings-show-the-dawn-of-imaginative-art-and-human-spiritual-belief-128457

[35] ICOMOS, is a global non-governmental organization which serves as an Advisory Body of the World Heritage Committee for the implementation of the World Heritage Convention of UNESCO. Its mission is to promote the conservation, protection, use and enhancement of monuments, building complexes and sites, Accueil - International Council on Monuments and Sites (icomos.org)

Maros Pangkep region is clearly an outstanding biological, archaeological, and cultural landscape" and that "the rock art of the region is of exceptional international significance. [...] This region currently lays claim to the world's oldest figurative rock art. The art of Maros Pangkep is older than the oldest cave paintings of Europe, formerly hailed as marking the 'Origin' of art. The rock art of this region is therefore vital to global understandings of the origins of symbolic thinking and the explanation of how so-called human 'cultural modernity' expanded throughout the world."[36]

In summary, the rock art of Maros-Pangkep is of particular significance because it is:

- amongst the earliest known rock art in the world;
- the earliest figurative rock art in the world;
- the earliest hand stencils in the world;
- the earliest depiction of hunting, animals and possible therianthropes (human-animal hybrids) in the world;
- representative of early symbolic behaviour of early modern humans;
- representative of a leap in early modern humans' cognitive development; and
- indicative that symbolic behaviour developed before early modern humans migrated out of Africa.

4.3 Potential impacts from Semen Tonasa's operations

In almost all of the Maros-Pangkep caves containing rock art, the hand stencils and figurative motifs have been affected by exfoliation. Recent research indicates that climate change is a primary factor in the deterioration, due to extreme fluctuations in humidity and temperature within the caves.[37]

Semen Tonasa has been accused of contributing to the deterioration of the rock art in the vicinity of its operations.[38] According to archaeologists working in the Maros-Pangkep region, the operational activities associated with cement production is an imminent threat to the rock art.[39] Anecdotal reports suggest

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[36] ICOMOS Advice to the Council on Ethics Concerning Maros Pangkep region, South Sulawesi, Indonesia, 8 September 2021.

[37] Huntley, J., Aubert, M., Oktaviana, A.A. et al, 2021, The effects of climate change on the Pleistocene rock art of Sulawesi. *Sci Rep* 11, 9833 (2021). https://doi.org/10.1038/s41598-021-87923-3.

[38] See for example The Guardian, World's oldest art under threat from cement mining in Indonesia, 21 February 2020, https://www.theguardian.com/science/2020/feb/21/worlds-oldest-art-under-threat-from-cement-mining-in-indonesia-sulawesi.

[39] Yusriana, Muda, K.T., Rustan, and Susant, D. 2020. The Threat to the Cave Wall Paintings in Prehistoric bulu sipong I Pangkep Regency, South Sulawesi. In *IOP Conference Series: Earth and*

that the rock art is deteriorating faster at sites closer to the limestone quarry and clay pit than at sites further away from mining activity. However, the study commissioned by the Council shows no systematic, data-based causal evidence of this. Nevertheless, it is important to note that this lack of evidence may be the result of limited data and inadequate monitoring. It may be that increased dust concentrations and vibration from mining activities are amplifying the effects of climate change.

Semen Tonasa has no systematic monitoring of rock art sites which provides a basis for assessing the activities' impact on the rock art. The monitoring programme conducted by the company is not relevant to the rock art.

Semen Tonasa's operations therefore have the potential to harm the rock art within and close to its operational areas. The following threats have been identified:

- *Dust generated by large trucks driving along dirt roads*: Several of the rock paintings are covered in a visible layer of dust, which may help to bind moisture. Several rock art sites are located right next to unpaved roads. One dirt road in particular, which connects the clay pit with the cement factory, runs close by the Bulu Sipong hill. The road is used solely by Semen Tonasa's trucks, which transport clay to the factory 30 times per day. Dust levels and air quality are not specifically monitored near rock art sites. The company does water the road, but only twice a day.
- *Vibration:* Drilling and blasting linked to the large-scale quarrying of limestone causes vibrations, dust and flyrock, which may impact the rock art directly or indirectly. The extent to which dust and vibrations are impacting the rock art is unclear due to a lack of relevant data. Although dust and vibration monitoring is carried out by Semen Tonasa, the vibration monitors have not been placed near rock art sites.
- *Visitor impact:* Vandalism, graffiti and other visitor impacts have already been experienced at some of the Maros-Pangkep cave sites. Human presence within the caves may result in increased humidity and dust pollution. Public access to the Bulu Sipong sites is restricted, but not to the other sites
- *Increased humidity associated with post-mining rehabilitation of the landscape*: Pools of surface water have grown in recent years, due to the establishment of rice fields and fish farms, and because water accumulates in disused clay pits The rehabilitation of disused clay pits could help to lower humidity levels within the caves.

Environmental Science 575:012247. doi:10.1088/1755-1315/575/1/012247, https://www.researchgate.net/publication/346477672_The_threat_to_the_cave_wall_paintings_in_prehistoric_bulu_sipong_I_Pangkep_Regency_South_Sulawesi/download.

- *Destruction of previously unidentified heritage sites:* There is a risk that previously unidentified rock art sites could be destroyed by mining activities directly or by associated subsidence in the landscape due to the extraction of limestone northeast of the cement factory. Furthermore, Semen Tonasa plans to develop a new concession at Bakka, several kilometres to the southeast of its existing operations in a densely forested karst landscape (see Figure 1 and Figure 5). Each year, new cultural heritage discoveries are made at Maros-Pangkep and additional sites could still be identified in close proximity to the company's mining operations. To date, Semen Tonasa has not implemented chance-find procedures or carried out surveys prior to the development of new operational areas.

Based on the risks that have been identified so far, the Council's study concludes that an extensive monitoring programme is needed in order to identify how the company's operations may impact the rock art, the scale of these impacts and what measures should be implemented to avoid and mitigate harm. A key element in the management of heritage sites is the implementation of an effective Heritage Management Plan (HMP). The plan must specifically target Semen Tonasa's operational areas, and cultural heritage protection must be integrated into the company's management systems.[40] The HMP must rest on systematic studies of blasting vibrations and dust management, for example, and must also include chance-find procedures. Semen Tonasa should also contribute to the development of the regional Heritage Management Plan which BPCB is currently working on.

According to the Council's study, the measures that the company has implemented so far, are not adequate to reduce the risk of damage to the sites. The study also indicates that a number of mitigation measures which stakeholders have proposed to Semen Tonasa, have not been implemented by the company.

5 Information from the company

The Council has communicated with SIG on several occasions since February 2021. The company has provided its views on a draft recommendation.[41] The company has also commented on the study commissioned by the Council, which contained recommendations for steps SIG should take.[42]

[40] IFC guidance note 8 Cultural Heritage, 2012, https://www.ifc.org/wps/wcm/connect/cce98f3d-f59e-488f-be59-6456c87d3366/Updated_GN8-2012.pdf?MOD=AJPERES&CVID=nXqnqf5.
[41] Letter from SIG to the Council on Ethics, dated 1 December 2022.
[42] Letter from SIG to the Council on Ethics, dated 9 September 2022.

Neither SIG nor Semen Tonasa has published any information about the rock art and archaeological sites to be found in the company's concession areas.

In its last letter to the Council, the company wrote: "We would like to emphasize our commitment as we conveyed on our previous letter to improve our efforts in managing cultural heritage, including on how we can establish the Heritage Management Plan (HMP) and enclose all the inputs given by Council on Ethics, such as the best practice in HMP, Chance Finds Procedure, Ground Disturbance Protocol etc."

SIG has informed the Council that it has implemented numerous measures to protect the rock art in the Bulu Sipong 4 cave. It has closed off an area of 32 hectares around the cave to protect local biodiversity, and it is no longer part of the company's operational area. Semen Tonasa has also created a 300 m buffer zone around the protected area, in which no quarrying may take place. The company informed the Council that it now periodically monitors dust and vibration levels at the site, that it is working on measures to restrict access to the cave, that the transport road is now watered every two hours while the clay pit is in operation, and that it has planted trees to reduce exposure to dust. The roadway will be permanently sealed by the end of 2023. The company will also consult relevant authorities with regard to the rehabilitation of disused clay pits to reduce humidity levels.

SIG also disclosed that it aims to develop a Heritage Management Plan for the area in partnership with the Geopark's management body. This plan will contain the following elements: "1) Continuous Monitoring of Company's Cultural Heritage, 2) Update for the Standard Operating Procedure of New Discoveries 3) Socialisation and Education plan for Management of Cultural Heritage site." A team will be established to prepare the HMP in conjunction with cultural heritage experts from the Maros-Pangkep Geopark Agency.

SIG further disclosed that it is "committed to expanding our Corporate Social Responsible Programs to more directly address the preservation and conservation of the rock art through the Bontoa Welfare Development Forum which will not only include the empowerment of biodiversity, but also including preservation of cultural heritage surrounding our operational area." The forum is a local organisation that Semen Tonasa contributes to through various CSR activities to support the local communities surrounding the company's production facilities.

6 The Council on Ethics' assessment

The Council on Ethics has assessed the GPFG's investment in SIG against the ethical guidelines' criterion relating to other particularly serious violations of fundamental ethical norms. This criterion may be applied when the norm

violation being assessed is not specified in one of the guidelines' other criteria, but is equally serious. The Council has assessed the activities on SIG's subsidiary Semen Tonasa in the Maros-Pangkep area of South Sulawesi, with the emphasis on the risk that the company is contributing to the destruction of prehistoric rock art and archaeological sites.

Some of the world's oldest rock art may be found in the karst landscape of the Maros-Pangkep region. The area's tentative listing as a UNESCO World Natural Heritage site and Geopark reflects its unique value in terms of both natural and cultural heritage. ICOMOS and international experts have deemed the rock art found in the area to be of exceptional global significance, because of its age and its relevance for the study of human evolution and settlement.

Semen Tonasa's cement production facilities and associated clay pits and limestone quarries make it a major player in the Maros-Pangkep karst landscape. The Council attaches importance to the fact that more than 40 archaeological sites are situated within or close to the company's concession areas and that almost half of these contain prehistoric rock art. This includes the earliest figurative rock art found so far anywhere in the world.

The rock art is deteriorating. Human-induced climate change seems to be an important factor in the exfoliation of rock art, which is an irreversible process. There is no clear evidence that the company's activities are harming the rock art, but the company's activities increases the risk of damage. The Council notes that the lack of a clear risk picture is due to weak underlying data and inadequate monitoring of the sites. The Council attaches importance to the fact that Semen Tonasa has a responsibility to identify risks associated with its activities, according to internationally recognised guidelines for the preservation of cultural heritage sites. The Council considers that a lack of oversight over the impact of the company's operations constitutes a significant risk, given the outstanding cultural heritage which the rock art represents. Without adequate steps to identify risks and implement necessary measures, the Council considers the risk that the company's operations may damage examples of irreplaceable cultural heritage to be unacceptable.

SIG has informed the Council that Semen Tonasa has implemented several measures to protect the cultural heritage, including measures to reduce the sites' exposure to dust and vibrations, and to strengthen its monitoring activities. SIG has also informed the Council that it is committed to protect all cultural heritage sites, that it will draw up a Cultural Heritage Management Plan for its production areas, and that it will include external expertise in this endeavour. The company will introduce chance-find procedures. It therefore appears as though the company now wishes to take a more systematic approach to the management of cultural heritage compared to previous practices. The Council presumes that the company will also report on how it is fulfilling this obligation.

The Council attaches importance to the fact that SIG has taken positive steps to protect important rock art and improve its cultural heritage management practices during the period in which dialogue with the company has been ongoing. Many of the measures that the company has planned could potentially reduce the risk of its activities damaging the rock art. However, although the work at the Bulu Sipong sites has been described in more detail, it is not as clear to the Council which measures will actually be implemented to protect other archaeological sites within and adjacent to the company's production areas. Nor can the Council see clearly what investigations the company will implement in practice to survey any cultural heritage sites before commencing new activities.

The Council on Ethics considers that the company must take particular responsibility for ensuring that Semen Tonasa's activities do not contribute to the destruction of the rock art, given the outstanding global significance of the cultural heritage it represents. This responsibility also extends to the protection of cultural heritage as yet undiscovered. The Council notes that the company does not appear to have implemented previously recommended measures concerning the protection of cultural heritage sites in its concession areas. Since many of the measures are still in the planning stage, the Council therefore recommends that SIG be placed under observation in order to monitor the implementation of these measures.

7 Recommendation

The Council on Ethics recommends that PT Semen Indonesia Persero Tbk (SIG) be placed under observation for a period of three years pursuant to the ethical guidelines' criterion concerning "particularly serious violations of other fundamental ethical norms".

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Johan H. Andresen Chair	Svein Richard Brandtzæg	Cecilie Hellestveit	Vigdis Vandvik	Siv Helen Rygh Torstensen
(Sign.)	(Sign.)	(Sign.)	(Sign.)	(Sign.)

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