

MEMORANDUM OF UNDERSTANDING

BETWEEN

KRANTIGURU SHYAMJI KRISHNA VERMA KACHCHH
UNIVERSITY, BHUJ, KACHCHH, GUJARAT, INDIA

AND

THE CHANCELLOR, MASTERS AND SCHOLARS OF THE
UNIVERSITY OF OXFORD, UNITED KINGDOM

1. PREAMBLE

This Memorandum of Understanding (MoU) is made between the Krantiguru Shyamji Krishna Verma Kachchh University, Bhuj, Kachchh, Gujarat (hereafter referred to as ("KSKVKU")), and The Chancellor, Masters and Scholars of the University of Oxford, United Kingdom, for the purpose of academic collaboration in archaeological field research and associated studies relating to the Harappan civilisation in the region of Dholavira and associated sites of Gujarat. Under this MoU, Dr. Gaurav D. Chauhan, Assistant Professor and Head of the Department of Geosciences, Head of the Department of Archaeology, KSKVKU, and Mr. Ajay Yadav, DPhil Candidate, School of Archaeology, University of Oxford, *supervised by Professor Damian Robinson*, shall serve as Co-Directors for the collaborative project titled: "Excavations at Dholavira and Associated Harappan Sites in Gujarat: Investigating Palaeo-Environments, Sea Levels and Early Seafaring Traditions".

Both institutions agree to extend support to facilitate the academic and research activities under this collaboration.

2. SCOPE OF COLLABORATION

The scope of collaboration shall include:

1. Archaeological excavation and survey at Dholavira and associated Harappan sites
2. Geoarchaeological, palaeo-environmental and hydrological research
3. GIS-based spatial mapping and palaeo-landscape reconstruction
4. Pottery provenance studies and material analysis



5. Ancient DNA (aDNA) studies relevant to environmental reconstruction
6. Academic exchanges, capacity building, and student participation
7. Joint preparation of excavation reports and academic publications

3. OBJECTIVES

The main objectives of the MoU are:

1. To reconstruct the palaeo-environmental conditions of the Rann of Kachchh region;
2. To understand settlement location strategies of Harappan sites;
3. To examine artefactual and biological evidence relating to maritime or estuarine activity;
4. To explore place-name evidence and geomorphological memory for reconstruction of ancient landforms;
5. To integrate excavation results with GIS and analytic datasets for interpretation.

4. DURATION

This MoU shall be valid for a period of three (3) years from the date of signing and may be extended by mutual agreement of both parties.

5. NATURE OF FINANCIAL ASSISTANCE

Collaborators and participating institutions may arrange or seek financial support from appropriate and legally approved public and private sources for various components of the project. Both institutions may also provide financial and logistical support, where feasible, for fieldwork, analytical studies and student involvement.

6. MONITORING AND EVALUATION

Progress in the collaborative project shall be reviewed annually, and the Co-Directors shall prepare progress reports for submission to both institutions.

7. TERMINATION

Either institution may terminate this MoU by providing six (6) months' written notice to the other, following which all project activities shall be brought to an orderly close.



8. FORCE MAJEURE

Neither party shall be held responsible for failure or delay in performance of obligations under this MoU due to unforeseen events beyond their reasonable control.

9. CONFIDENTIALITY OF DATA GENERATED, COPYRIGHTS, MEDIA AND PUBLICATIONS

All data, images, and results generated under this MoU shall be jointly owned by the two institutions. All excavated materials shall remain under the custody of the KSKVKU/Archaeological Survey of India, as per statutory guidelines. Nothing in this MoU shall prevent or hinder registered students of either party from submitting theses based on results arising from this collaboration. Publications will adhere to academic norms of authorship and contribution.

10. COLLABORATORS

Both institutions may, by mutual agreement, include additional collaborators in future activities under this MoU. Foreign collaborators may participate only with a valid Research Visa and requisite Government of India approvals. Names of such collaborators shall be included in annual progress reports.

11. GENERAL CLAUSE

Each project agreed under this MoU shall be read as part of this MoU. This MoU shall be operational primarily through the above-named Co-Directors, with institutional endorsement and oversight. **Annexure I (Project Brief) forms an integral part of this MoU.**

12. MISCELLANEOUS CLAUSE

The paragraphs titled "Confidentiality..." and "Miscellaneous Clause" shall be legally binding. All other provisions of this MoU are intended for academic cooperation and do not create enforceable legal obligations.

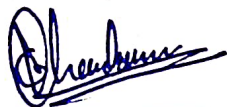


13. NON-BINDING NATURE OF THE MoU

Except for the paragraphs titled "Confidentiality..." and "Miscellaneous Clause", this MoU is not intended to give rise to legal relations, is not legally binding, and shall not create enforceable obligations.

14. SIGNATURES

For Krantiguru Shyamji Krishna Verma Kachchh University, Bhuj, District Kachchh, Gujarat



Dr. Gaurav D Chauhan
(Co-Director)
Assistant Professor, Dept. of Geosciences,
Head of the Department of Archaeology, KSKVKU
Head
Date: 12/02/2026 **Department of Geosciences**
K.S.K.V. Kachchh University
Bhuj-Kachchh

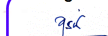


Dr. Mohan Patel
Vice-Chancellor, KSKVKU
Date: 12/02/2026
Vice Chancellor
K.S.K.V. Kachchh University
Bhuj - Kachchh

For The Chancellor, Masters and Scholars of the University of Oxford

Signed in Acknowledgement

Signed by:



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Mr. Ajay Yadav
(Co-Director)
DPhil Candidate, School of Archaeology
University of Oxford
Date: 12 February 2026

Signed by:



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Name: Eleanor Salmon
Title: Research Contracts Lead
University of Oxford
Date: 12 February 2026

WITNESSES



For KSKVKU
Dr. Anil H. Gor, Registrar, KSKVKU
REGISTRAR
KSKV Kachchh University
Bhuj-Kachchh-370001

For the University of Oxford



PROJECT BRIEF

Excavations at Dholavira and Associated Harappan Sites in Gujarat: Investigating Palaeo-Environments, Sea Levels and Early Seafaring Traditions

1. Background and Problem Statement

The Harappan Civilization (c. 2600–1900 BCE) has been interpreted chiefly through its urban planning, craft industries and inland trade, while its engagement with the sea has remained an unresolved question. A critical cluster of Harappan settlements in Kachchh—distributed across the bays or islands of the Great and Little Ranns—poses a geographical paradox: these locations are agriculturally marginal and environmentally volatile, yet they supported substantial settlements over long periods. Existing explanations that treat them merely as resource-exploitation outposts or industrial satellites fail to account for their spatial logic and sustained occupation.

The present project arises from the hypothesis that these settlements were positioned along dynamic estuarine or marginal marine landscapes that offered access to both inland and littoral networks. However, the marine or estuarine character of the Ranns remains unproven. The project therefore seeks to empirically test this proposition through an integrated programme of excavation, geomorphological analysis and material studies, combining ground evidence with historical mapping and local ecological memory.

2. Research Context

At the core of this investigation is Dholavira, a major fortified urban centre on Khadir Bet, complemented by Junj Kuran on Paccham Bet and Lothal on the Gulf of Khambhat. Together they represent a gradient from interior island to open-gulf environments. Their comparative study allows the testing of a single problem across multiple hydrological settings: whether these settlements functioned within a continuum of inland–estuarine–maritime connectivity.

Recent palaeo-environmental studies indicate oscillations in sea level and precipitation during the mid- to late-Holocene, but the spatial extent of these changes across Kachchh remains uncertain. The Ranns' flat relief and ephemeral drainage make them sensitive to minor sea-level fluctuations; hence small vertical differences could have transformed them into shallow lagoons or tidal basins. Establishing when,



and to what extent, this transformation occurred is central to evaluating the maritime hypothesis.

3. Aims and Research Questions

- a) **Palaeo-Environmental Reconstruction:** To determine whether the Ranns of Kachchh functioned as marginal marine, estuarine, or purely terrestrial basins during the Harappan and post-Harappan periods.
- b) **Settlement Logic:** To examine why sites such as Dholavira and Juni Kuran were located on island-like elevations and how their placement related to hydrological and geomorphological conditions.
- c) **Material and Technological Correlates:** To analyse pottery, faunal, and artefactual assemblages for signatures of exchange, subsistence, and craft specialisation connected to marine or estuarine environments.
- d) **Cultural and Cognitive Dimensions:** To investigate continuities in maritime perception and worship through the Śikotar–Vāṇuvaṭī Mātā tradition, whose sanctuaries along Gujarat's coast preserve memories of seafaring, storm protection, and divine guardianship of vessels.
- e) **Toponymic and Local Memory Evidence:** To integrate the KML-based survey of village field names—terms such as Bazaar, Odadiya, Navoda, Khari, and Bhatha—which encode geomorphological and occupational memory, as proxies for ancient shoreline and sedimentation processes.

4. Methodological Framework

- a) **Excavation and Field Strategy:** Re-examination of Dholavira's lower-town and peripheral zones with limited new trenching in UNPROTECTED AREA towards the Rann margin to capture sediment transition from settlement mounds to basin deposits. Surface and sub-surface sampling of adjacent sites (Juni Kuran, Lothal and others) in later seasons to build a comparative geomorphic sequence. Use of high-precision GPS, GPR survey and drone photogrammetry to document micro-relief and site topography. Collection of Natural Soil (NS) levels from earlier excavated and new trenches to serve as vertical reference points for sea-level modelling.
- b) **Geoarchaeology and GIS Analysis:** Georeferencing of early Survey of India 1:50 000 topographical sheets that better preserve pre-modern drainage and contour detail. Integration of DEM-derived elevation data with NS levels to model palaeo-waterlines and possible navigable channels. Classification of field-name polygons from KML surveys to reconstruct historical landform categories—settlement mounds, levees, saline basins, and depositional envelopes—and correlate these with excavation stratigraphy. Collaboration with specialists in sediment micromorphology, OSL dating and soil chemistry for chronological and processual interpretation.



- c) **Material and Biomolecular Studies:** Pottery Provenance: Sr–Nd isotopic and petrographic analysis of Black-Slipped Jars and related transport ceramics from Gujarat, Indus heartland, and Omani contexts to track circulation routes. Ancient DNA (aDNA): Controlled sampling of pottery, clay, and bone for microbial and host DNA to distinguish marine versus terrestrial inputs and to infer depositional environments; these results will refine the GIS-based palaeo-environmental reconstruction and complement residue analyses already pioneered by KSKVKU. Faunal and Shell Assemblages: Taxonomic and taphonomic study of fish, molluscs, and terrestrial fauna to quantify marine exploitation.

5. Integration and Expected Contributions

- Production of a high-resolution palaeo-topographic and palaeo-hydrological model of the Dholavira region, anchored by stratigraphic and analytical data.
- Empirical testing of the marine-estuarine hypothesis for the Ranns of Kachchh through sediment, biomolecular, and toponymic evidence.
- Reconstruction of settlement hierarchies and networks linking inland Gujarat with potential coastal and overseas routes.
- Development of a cross-disciplinary methodology combining archaeology, GIS, biomolecular science, and cultural anthropology.
- Creation of a digital spatial archive integrating excavation data, DEM layers, field-name maps, and analytical results accessible to both partner institutions.
- Contribution to broader debates on adaptive strategies and seafaring in early complex societies of South Asia.

6. Implementation and Duration

The project will operate over three years, with one excavation season each year at Dholavira (December–March) and intervening periods dedicated to laboratory analysis and data integration. Junj Kuran, Lothal and other sites may be taken up in subsequent seasons as comparative locales, if time and resources permit. Interim findings will be jointly reviewed after each season, culminating in a composite final report and peer-reviewed publications.

7. Scholarly and Institutional Value

The project represents the first coordinated attempt to integrate environmental reconstruction, material science, and cultural memory in understanding the Harappan interface with the sea. It aligns with KSKVKU's emerging tradition of field archaeology and Oxford's strength in analytical and theoretical research. Beyond its scientific outcomes, it is expected to generate significant capacity-building through the participation of postgraduate students and early-career researchers from both institutions.

