

COCHIN PORT AUTHORITY

LIMITED TENDER FOR CONSULTANCY SERVICES FOR PROVIDING PORT LED DEVELOPMENT WORKS AND ALLIED FACILITIES WITH SPECIFIC EMPHASIS ON DEVELOPMENT OF MULTI MODAL JETTIES IN EASTERN OR WESTERN SIDE OF FIVE ISLANDS VIZ. KAVARATTI, AGATTI, KADMAT, KALPENI AND MINICOY IN LAKSHADWEEP (TENDER NO. T15/T-1963/2022-C)

ADDENDUM /CORRIGENDUM No.2

The following clauses in the Bid Document stand amended / replaced as below:

Sl. No.	Section / Clause No./ Page No.	Modified as / Replaced with/additional details
1	List of Islands appears at various sections/clauses.	Island of Androth is also included in the list of islands viz. Kavaratti, Agatti, Kadmat, Kalpeni and Minicoy covering the subject tender and number of islands now been six instead of five.
2	Clause 1.7 (Page-11) "Brief Description of the Selection Process" of Invitation of Proposal	In the last line of the para, the sentence ".....with weightage of Technical and financial score in ratio of 70:30." <i>is modified as</i> ".....with weightage of Technical and Financial score in ratio of 80:20 "
3	Appendix-I, Terms of Reference (ToR) (Page-39)	The Appendix-I, Terms of Reference (ToR) of the Bid Document is modified and annexed.
4	Appendix – V, Sheet 2 (Page 53), FIRM'S EXPERIENCE:	The first line "Relevant Services carried out in the last five years that best illustrate fulfillment of Eligible works as per Clause: 5.2.1" <i>is modified as</i> "Relevant Services carried out in the last seven years that best illustrate fulfillment of Eligible works as per Clause: 5.2.1".


CHIEF ENGINEER

Consultancy Services for providing Port led development works and allied facilities with specific emphasis on development of multi modal jetties in eastern or western side of six islands viz. Kavaratti, Agatti, Kadmat, Kalpeni and Minicoy in Lakshadweep

TERMS OF REFERENCE (ToR) [Modified]

1. BACKGROUND:

Lakshadweep is an archipelago consisting of coral islands and reefs. This group of islands comprise of 27 islands, 3 reefs and 6 submerged sand banks, out of which 11 islands are inhabited (including the Island resort of Bangaram). Islands are scattered to the west of Kerala Coast at a distance varying from 200 Kms to 400 Kms in the Arabian Sea. These islands are separated from one another by deep sea and are at an average distance of 60 to 300 Kms from one another. They lie between 8° N to 12° 30' N latitude and between 71° E to 74° E longitude.

The main islands are Kavaratti, Agatti, Minicoy, Amini, Andrott, Bitra, Bangaram, Chetlat, Kadmat, Kalpeni and Kiltan. The total land area of the islands is 32 sq. km and total population of the territory is 64,429, according to the 2011 census. Agatti has an airport with direct flights from Kochi

The traditional occupation of the people of these islands is fishing and coconut cultivation. Shipping is the only way to connect the islands to one other as well as to mainland. Lakshadweep islands mainly depend on water transport for movement within the islands and from the mainland and it is the only affordable mode of transportation between islands both for passengers as well as cargo. Apart from the construction materials for development works even the essential commodities like ration, POL, medicine, clothing, stationeries, provisions and other essential items required to meet the daily needs of the local people are brought from the mainland. Moreover, the students have to travel for schooling and for pursuing their higher education. Also patients need to travel regularly to main land particularly, Kochi as there is limited medical facility available in the island. Additionally, huge number of tourists also visits Lakshadweep by ship. Shipping services, therefore, is the lifeline of the people of Lakshadweep islands.

Though the Lakshadweep islands presently have transport limitation, there is high potential in the following sectors.

Tourism: Lakshadweep, being group of exotic islands, has beautiful beaches, serene and peaceful ambiance, which makes it a complete tourist destination. The period from September to February is the best time to visit Lakshadweep Islands, as the climatic conditions remain pleasant (between 20-30°C). However, there is ample scope for round the year Tourism activities and opportunities in the islands.

Coconut and by-products: An area of 2674 hectare is under coconut cultivation in Lakshadweep with coconut production of 35292 Nos per hectare. Since coconut cultivation in Lakshadweep is 100% organic, there is high potential for the coconuts related in the market, including export market.

Fishing: Lakshadweep, being the only coral atolls of India, has unique geographical features having vast lagoon area of 4,200 Sq. Kms, Territorial waters of 20,000 Sq. Km, Exclusive Economic Zone (EEZ) of 4,00,000 sq Kms and coastal line of about 132 Kms. The sea area around Lakshadweep is rich in fishery resources, mainly Tuna. The estimated potential in this regard is more than one lakh tons of Tuna & Tuna like fishes and about an equal quantity of Shark. The present annual production is about 12,000 tons, which is hardly 5% of the total potential. About 80% of the total Fish landed in Lakshadweep is Skip Jack Tuna, 60% of the total landing is converted to dried

products and about 40% goes for local consumption. Other than the Skipjack Tuna, no fish is caught on commercial basis. The supply chain of fresh Tuna as well as processed fisheries products has huge commercial potential including potential for export to EU and far East markets. Therefore, there is ample scope for export of fish and its products from Lakshadweep.

International shipping: Minicoy is reputed for its light house built in 1885 and it largely serves the Merchant Ships passing through the international sea route between the Gulf Countries and Sri Lanka & Far East. About 80% of the male population in Minicoy is engaged in Merchant Shipping as seamen. The island being in the international shipping route has very high potential to develop as an international Port with bunkering facilities, Ship Chandelling etc. as well as a favourite crew change destination and can also fetch direct international market for fisheries sector. However, to tap on and harness the real potential, transportation and logistics become the main stay. At present the Port facilities in these islands are still not developed to the industry standards, due to which the Administration has to own and operate ships and barges, because the shore facilities available cannot handle standard Merchant Ships.

All the Islands, except Andrott Island, have shallow water lagoon on the western side and open deep waters on the Eastern side. All islands except Andrott are in NE to SW alignment, Andrott is with East-West alignment. In all the islands, port infrastructure is developed in the western side inside shallow lagoon, which is the only available protected area in most of the islands for shipping operations.

Due to peculiar geography of the islands, there are limitation in providing Port and Harbour infrastructure. The lagoons on the western side of the islands have shallow waters which is not adequate even for the Pablo boat traffic. On the eastern side of the islands, the sea is very deep immediately from the shore and is exposed to the disturbances in the sea in monsoons

All inhabited Islands of Lakshadweep are provided with ferry jetties located inside the lagoon on the western side of the islands, whereas two Islands i.e. Andrott and Kalpeni are provided with wharf inside partial breakwater. The jetties constructed inside lagoons in western side of islands can only handle berthing of low draft crafts, like boats, tugs, dump barges etc. for passenger and cargo operations from ship to shore. Regular silt clearance (maintenance dredging) of entrance channel and jetty areas are being carried out, but maximum draft inside the lagoon area remain at 1.80m, which is nearly safe for operation of low draft boats/crafts. Due to this draft restriction in western side jetties, low draft High Speed Crafts berth at jetties inside lagoon jetties only at Kavaratti, Andrott, Kalpeni and Minicoy islands, whereas in all other islands operation is carried at out sea by small boats. The movement of crafts during low tide becomes difficult inside lagoon in most of the islands which leads to delay, unpredictable and unsafe cargo as well as passenger operations.

However, in order to facilitate berthing of bigger ships, deep water jetties are provided in the eastern side at Kavaratti, Agatti, Amini and Minicoy islands, which are operational only during very clam weather and sea conditions. Andaman & Lakshadweep Harbour Works (ALHW) completed construction of these jetties in above four islands in 2010-12, which still remain to achieve the projected target of safe and all-weather operation of bigger ships. In many islands, bigger ships are attended at outer sea as they cannot come inside the lagoon and no other Port facility is available for this purpose. Normally, in many islands, passengers' operations are carried out at high sea with small Pablo boats from ship to island and vice-versa and cargo with the help of dump barges towed by wooden tugs. These islands receive high rainfall and



rough weather is experienced for more than 5 months in a year. During monsoon period (May-September), inter-island movement as well as movement of passengers from mainland also becomes very difficult with almost all passenger and cargo handling in all islands being done at the high seas. This is not only a safety hazard but also reduces efficiency of the assets drastically, thereby increasing the cost of operations. Not only this but due to other reasons the Ship schedules also becomes unpredictable. During monsoon season passenger operations in some of the islands, due to their geographical conditions, become unsafe.

As the sea is the high way to these islands, shipping services assume major role in the development of the islands. At present the Port facilities in the islands are not well developed to the industry standards. In order to cater the above requirements, these inhabited islands should have well developed infrastructures for facilitating all-weather 24x7 unhindered shipping operations and effective and safe passenger handling. In view of this, there is immediate need for providing new Port infrastructures with modern facilities and refurbishing the existing infrastructures presently provided for handling the passenger ships and the cargo vessels. In view of above, it has become necessary to carry out a detailed study to improve the port and shipping service in Lakshadweep Islands.

UTLA has launched various developmental programs for port led prosperity and also strategic initiatives to modernize various Ports within Lakshadweep, so that port-led development can be augmented, coastlines and hinterland can be developed to contribute in growth of the Union territory. Lakshadweep Administration is making efforts in transforming the existing Ports into modern world class Ports and integrate the development of the Ports and adjoining areas, other commercial activities and efficient logistics systems through road and coastal waterways resulting in Ports becoming the drivers of economic activity.

Union Territory of Lakshadweep Administration (UTLA) has engaged Cochin Port Authority (CoPA) as Project Management Consultants for providing technical support / consultancy services to UTLA in development of Port and Shipping infrastructures and operation in Lakshadweep Islands. A Joint Proposal is signed by both UTLA and CoPA for the purpose of providing consultancy on port operations and upgrading the shipping infrastructure in UTL, particularly on future projects to be taken up and for effective utilization of existing infrastructure in UTL.

Various Developmental activities are mainly related to the Marine infrastructure development and efficient shipping operations at all the islands of Lakshadweep in general and the islands as determined by UTLA, as per its priority list including Minicoy, Kavaratti, Agati, Andrott, Kalpeni, Kadmat, Chetlet, Bitra, Kiltan, Amini, Bangaram, Thinnakara, Cheriya, Suheli and Peremulpar. The developmental activities in the islands shall be synchronized with the identified locations including old Mangalore Port, Cochin Port and Beypore Port at mainland which are incidental to streamlining of shipping activities and have an impact on smooth Shipping operations in the Lakshadweep islands.

To move forward in this direction, CoPA intends to avail the services of a competent, well experienced and reputed firm/group with a team of multi-disciplinary professionals and proven capabilities in this field (Consultant) for "Consultancy services for providing Port led development works and allied facilities with specific emphasis on development of multi modal jetties in eastern or western side of six islands viz. Kavaratti, Agatti, Andrott, Kadmat, Kalpeni and Minicoy in Lakshadweep with the objective, vision and Scope of Work (TOR), as detailed below.



2. OBJECTIVE AND VISION:

Objective: The Consultant is expected to work in close co-ordination with CoPA and UTLA to formulate actionable strategies/action plans categorizing them as Immediate (within one year), Short Term (within 3years) and Long Term (more than 4 years), with an objective of facilitating Lakshadweep Islands into an all-weather 24x7 unhindered shipping operations and effective and safe passenger handling of the country.

Vision: To design Master Plan for all the inhabitant islands of the Lakshadweep, specifically for six islands Kavaratti, Agatti, Andrott, Kadmat, Kalpeni and Minicoy of Lakshadweep as first phase for (i) achieving safe, efficient and effective operation of port and shipping services by upgrading the shipping infrastructures on both onshore and offshore in Lakshadweep Islands, particularly on the future projects to be taken up and for effective utilization of existing infrastructure and ensuring 24x7 operations of shipping services in all islands and (ii) identifying and utilizing the potential areas of various sectors in all islands in an efficient and effective manner on balancing cultural, ecological and economic growth of the region/stakeholders

3. SCOPE OF WORK :

The Scope of Work under the proposed Assignment shall mainly include the following but not limited to:

- a) Conducting the Existing / Situational Analysis which includes Base data collection and site visits; Collection and Review of existing master plans, development plans, land use plans, and other reports on the existing scenario, facilities, infrastructure and other related matters, of the island area.
- b) Stakeholders Consultations and Analysis which includes consultation with UTL government officials, departments and other concerned state and central organizations,
- c) Preparation of quantifiable/measurable steps/Action Plans, aligning with the existing Master Plans/ Vision Documents of UTLA along with cost estimates of Project Proposals, Infrastructure required to achieve the set goals within a stipulated time frame, categorizing it into Immediate, Short Term and Long Term.
- d) Making presentations to concerned authorities on the above.

The overall Scope of Work shall include, but not be limited to the following:

3.1. Existing/Situational Analysis:

- a) Base data collection and site visits for assessing the prevailing site conditions, locational advantages, linkages/access, land use, existing port infrastructure/facilities and the overall environment, from primary and secondary sources.
- b) Collection and Review of existing master plans, development plans, land use plans, and other reports on the existing port infrastructures, facilities, infrastructure and other related matters, of the islands.
- c) Preparation of a set of case studies of successful island development and implementation by various similar countries across the globe.
- d) Assessment of required Port led Infrastructure for achieving safe, efficient and effective operation of port and shipping services in inhabitable islands by upgrading the shipping infrastructure in Lakshadweep Islands, particularly on the future projects to be taken up and for effective utilization of existing infrastructure.
- e) Assessment of the possibilities of availing Central Financial Assistance /State Financial Assistance/PPP investments for the envisaged development and providing due assistance for the same.



3.2. Stakeholder Consultations and Analysis

Consultation with government officials, departments and other concerned local state and central organizations, reputed local planners/developers/architects/populace and such other stakeholders, about issues related to development expectations, offerings, needs and reflection on current conditions, Hospitality conditions in and around tourist area, Connectivity, Affordability, Promotions and awareness.

3.3. Preparation of Action Plans and Proposals

- a) Preparation of quantifiable/measurable steps/Action Plans, aligning with the existing Master Plans/ Vision Documents of Port, State & Country, along with cost estimates of Project Proposals, Infrastructure required to achieve the set goals within a stipulated time frame, categorizing it into Immediate, Short Term and Long Term in line with Sagarmala vision and other relevant vision of UTLA/Govt. of India.
- b) Preparation of detailed Master plan of Kavaratti, Agatti, Andrott, Kadmat, Kalpeni and Minicoy islands of Lakshadweep as first phase and for all other inhabitant islands.

The Master Plan for Lakshadweep Islands should be both economically and environmentally sustainable, integrating seamlessly with the habitats of Lakshadweep, the vast biodiversity spanning various topographies and protected environments of the reefs, lagoons and the islands, marine ecology and communities living within and bordering its precincts.

The master plan of each island shall be prepared covering the following:

- (i) Analyze the existing operational issues at Eastern and Western jetties and provide recommendations for efficient integration of the existing marine infrastructure proposed development works, with cost implication.
- (ii) Development of new infrastructures for Port and Shipping sector in Lakshadweep islands for safe, secure and seamless movement of men and material in and out of the islands.

The facilities shall cater for multipurpose seafront usage for handling vessel traffic pertaining to Passenger, General Cargo, POL, Liquids including UTLA vessels and MSVs & Gas pipelines and integrating proposed/ existing Eastern and Western facilities with protection possibly by suitable breakwaters or similar wave attenuation systems for safe, secure and seamless inwards and outwards movement of men/users and material including all passenger facilities

- (iii) Development of Port /Shipping infrastructures under Sagarmala scheme
 - Study the feasibility for development of infrastructures in eastern and western side of islands
 - Preparation of Detailed Project Report including Detailed Design and Engineering and Estimate for submitting the proposals to Ministry for funding and approval of the projects for six islands Kavaratti, Agatti, Andrott, Kadmat, Kalpeni and Minicoy as first phase and for all other inhabitant islands
 - DPR for Development of Multi Modal jetties / All-purpose and all weather jetties in eastern and western side of islands as per the feasibility in six Lakshadweep Islands viz. Kavaratti, Agatti, Andrott, Kadmat, Kalpeni and Minicoy have to be prepared as first phase in the format of Sagarmala schemes and submitted to Ministry for funding under Sagarmal scheme. Multi modal jetties / All purpose and all weather jetties are proposed to take care of round the clock operations for all the requirements with respect to berthing of all types of ships, sea planes, barges, boats, leisure crafts and

other crafts, seaplane service with all facilities for fishermen, passenger, petroleum product, cargo, food grains and separate floating jetty for seaplane. These jetties shall also provide safe harbour for fishing boats with fish landing facilities.

- (iv) Development of allied facilities in islands such as Reclamation of land utilising dredged materials, Providing adequate permanent rubber fenders and bollards in the jetties, Providing mooring buoys, Development of landing area for sea plane to boost tourism, Providing passenger cum cargo handling equipment like mechanized ladder and crane, High Mast and Lighting facilities in the jetty, Passenger terminal in each jetty to be used as shelter during emergency/ disaster., Construction of shed on the shore for container stuffing and de-stuffing, Construction of Sheds for storing of general cargo and accommodating workshops, Development of boat building yards / repair facilities, Hover craft landing area and shed etc.
- (v) Upgrading physical and social infrastructure in the islands like Rain water harvesting system, potable water supply system, renewable electrical energy generation, training institute for imparting training to the resident of the islands etc., the cyclone shelters, Sewage treatment plant, Solar panel for harvesting solar energy, Wind mill for harvesting wind energy, proper solid waste and garbage disposal system, development of tourism related infrastructures, infrastructures for promoting small scale industries like fish processing, ice plant, coir industry etc., creation of entertainment facility like park etc.
- (vi) Expansion of jetties with specific emphasis on passenger amenities and cargo gears, fenders etc. for safe and efficient operations
- (vii) Possibility of floating jetties in all islands
- (viii) Checking the stability analysis of damaged breakwater at Kalpeni Island.
- (ix) Developing a multi-modal transport hub in Agatti Island (including water drome, passenger jetty, etc.) along with the proposed expansion of Agatti Airport
- (x) Developing an all-weather Harbour of very high draft around the existing harbour of the Andrott Island.
- The Andrott Port will act as main hub of Coastal Shipping as well as International Shipping. The port should have all modern facilities and compliance of all international law like MARPOL, ISPS etc. It is also proposed to construct new container handling infrastructures and liquid petroleum product handling facility with storage tank at Andrott. It is proposed to develop infrastructures including floating jetty for sea plane service to facilitate development of the island as a Business Hub.
- (xi) Assessing and advising the requirements of Capital dredging and Maintenance dredging including providing dredging plan in various islands
- Dredging and development of approach/entrance channel, basins, turning circle etc. in the west side jetties is also proposed to take up; however, the dredging activities shall be done without causing much disturbance to the coral reef and close environmental monitoring should be done. All dredging programme should be oriented according to the guidelines suggested by the Reef Monitoring Network and Management Plans.
- (xii) Possibility of dredging inside western side lagoons to increase the depth to an appropriate level for safe berthing of at least low draft cargo vessels having draft of 2.70m in west jetties in all islands.



- (xiii) Reclamation of land along the shore using dredged materials
- (xiv) Recommending new technologies in relevant areas of construction on par with the international standards for development of various onshore and offshore infrastructure.
- (xv) Highlighting the advantages of infusing the state of art technology in the developments of various facilities created in similar environment. For example, the development activities that are happened in Singapore and Maldives particularly created on Sentosa model shall be reviewed and the feasibility of implementing a similar or better arrangement in development of Lakshadweep Island can be explored.
- (xvi) Review of the available DPRs and ongoing works including the design, specifications, methodologies and progress of all the ongoing works in all the Lakshadweep Islands and recommend the modifications required for effective utilization of the facilities that are being developed.
- (xvii) Review of projects in pipeline and provide recommendations in view of the Phase-I developments and technical soundness / suitability.
- (xviii) NIOT desalination plant suction infrastructures, if feasible be planned with eastern side marine facilities. These facilities may be protected with introduction of floating / fixed breakwater as feasible. The development may be planned, integrated with helipad infrastructures with night handling facilities.
- (xix) Preparation of DPR for dedicated facility for Lakshadweep to handle passenger and cargo in the Baypore Port for submission under Sagarmal scheme
- (xx) Preparation of comprehensive report on complete logistics requirements of the islands and way forward in Port and Shipping sector
- (xxi) Conducting Geotechnical investigations, Bathymetric Surveys, topographical surveys, model studies as required for this consultancy assignment.

3.4 Presentation of the above Proposals

The Consultant shall make detailed presentations on the above proposals to the Employer and UTLA before finalizing the DPR and Masterplan of each Island. The Consultant shall make presentation to the Ministry as required as part of the approval of the project under the Sagarmala scheme without any additional cost.

4. PROJECT DELIVERY STAGES

- a) The assignment for Consultancy for providing development of Lakshadweep Islands and allied facilities is to be completed within a time duration of 9 months.
- b) Key deliverables of the Master Plan / Action Plan would be:
 - Inception Report
 - Existing/Situational Analysis Report
 - Stakeholder Consultation Analysis Report
 - DPRs for Multi modal jetties of six islands
 - DPRs for Multi modal jetties of all other islands
 - Master Plan of each Lakshadweep Island.
 - Outline specification for the proposed developments
 - Report on stability of Break water structure in Kalpeni and Andrott islands
 - Comprehensive report on Logistic requirements in Islands and way forward



- DPR for development of dedicated facility for Lakshadweep at Baypore Port
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5. DELIVERABLES, TIME AND PAYMENT SCHEDULES

- 5.1. The total duration of the entire Assignment is expected to be approximately **12 months**. The Consultant must have sufficient manpower to comply with the Scope of Services. The Consultant is required to ensure that the total envisaged work including submission of the above deliverables is completed within 9 months.
- 5.2. The Total Fee for the proposed assignment shall be quoted as a Lumpsum fixed amount in Indian Rupees. Conditional proposals shall be summarily rejected.
- 5.3. Soft Copy and 7 (Seven) hard copies of all the deliverables shall be submitted within the time stipulated for each submission.
- 5.4. The following table details the time frame and payment structure:

Sl. No.	Payment to be Released on	*Time Schedules from commencement	#Percentage of Agreed Total Lumpsum Fee
1	Submission of Inception Report and Existing/ Situational Analysis Report	2 Months	10
2	Submission of Stakeholder Consultation Analysis Report and presentation thereon	3 Months	10
3	Submission of Draft Detailed Project Report of Multi modal jetties in six islands Kavaratti, Agatti, Andrott, Kadmat, Kalpeni and Minicoy of Lakshadweep as per Sagarmala format and presentation thereon.	5 Months	20
4	Submission of Final DPRs for item No. 3 above and approval of Ministry for the project	7months	10
5	Submission of Draft Detailed Project Report of Multi modal jetties in other islands	9months	10
6	Submission of draft Master Plan report of all the inhabitant islands of Lakshadweep and presentation thereon	9 Months	20
7	Submission of Final DPRs for item No. 5 above and approval of Ministry for the project	10months	5
6	Outline specification of proposed developments	11months	5
7	Acceptance of Master Plan of six islands	12 Months	10

* The time taken for approvals from the Employer will not be considered as part of the aforesaid timeline.



The quoted fee shall include all expenses whatsoever, such as legal fees and all out of pocket expenses etc. to be incurred by the Consultant to complete the assignment. GST as applicable, shall be indicated by the Consultant on total fee, as extra.

- 5.5. Payments will be made by CoPT within 15 working days from the receipt of bill with all supporting documents / reports complete in all respects. In case any document is not enclosed initially, the above time limit will be reckoned only from the date of submission of such document
- 5.6. Payments against the items at Sl. Nos. 3 to 7 shall be released on prorata on submission of reports as necessary towards each island.
- 5.7. In case the Employer decides to abandon the Assignment for any reason, whatsoever, at anytime, the payment of the Consultant shall be restricted up to the stage the services have actually been provided by the Consultant.

6. DOCUMENTS TO BE MADE AVAILABLE BY THE AUTHORITY

Available data as may be required by the Consultant will be provided by the UTLA on request. The Nodal Officer designated by the Authority shall facilitate handing over of such information to the Consultant. Available details /reports with the Authority / UTLA are as listed below.

- (i) Vessel traffic details.
- (ii) Historical Wind, Wave, Current, Tide data, as per availability.
- (iii) Geotechnical Investigation Reports for the above 15 locations, as per availability.
- (iv) All the available data including the previous reports in both soft and hard copies.
- (v) DPRs including the design, specifications, methodologies and progress of all the ongoing works in all the Lakshadweep Islands shall be made available for review and recommendation of its adaptability
- (vi) Report of Subcommittee of Cochin Port.

SIGNATURE OF BIDDER

A handwritten signature in blue ink, appearing to be 'S. Bal', is written over a horizontal line.