



**Request for Quotation (RFQ) Supply and installation of green energy irrigation system to the CSIR in White River, Mpumalanga (Re-Advertisement).**

**RFQ Number: RFQ 6467.1-12-03-2025**

|                                                      |                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date of issue                                        | 13 June 2025                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Compulsory Briefing MS Team                          | Date and Time                                                                                                                                                                                | 23 June 2025 @ 11:00 am                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                      | Link                                                                                                                                                                                         | <a href="https://teams.microsoft.com/l/meetup-join/19%3ameeting_OTq4NzQxYTgtZDI1MC00MWJhLWE4OWYtYjc3ODQzOWU2ZDZh%40thread.v2/0?context=%7b%22Tid%22%3a%222fd3c5d5-ddb2-4ed3-9803-f89675928df4%22%2c%22Oid%22%3a%2280fd6faf-06cc-4664-87c0-a1613addf353%22%7d">https://teams.microsoft.com/l/meetup-join/19%3ameeting_OTq4NzQxYTgtZDI1MC00MWJhLWE4OWYtYjc3ODQzOWU2ZDZh%40thread.v2/0?context=%7b%22Tid%22%3a%222fd3c5d5-ddb2-4ed3-9803-f89675928df4%22%2c%22Oid%22%3a%2280fd6faf-06cc-4664-87c0-a1613addf353%22%7d</a> |
| Last date for submission of enquiries/clarifications | 25 June 2025 @ 16h30                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Closing Date and Time                                | 30 June 2025 @ 16h30 (late submissions will not be accepted)                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| RFQ Validity Period                                  | 90 calendar days (Commencing from the RFQ closing date)                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Enquiries and submission of proposals                | For submission of quotations or any other enquiries:<br>Email <a href="mailto:tender@csir.co.za">tender@csir.co.za</a> ( <b>Please use RFQ No and RFQ Description as subject reference</b> ) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| CSIR Hours                                           | 08h00 – 16h30                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

## 1 INTRODUCTION

The Council for Scientific and Industrial Research (CSIR) is one of the leading scientific research and technology development organisations in Africa. In partnership with national and international research and technology institutions, the CSIR undertakes directed and multidisciplinary research and technology innovation that contributes to the improvement of the quality of life of South Africans. The CSIR's main site is in Pretoria while it is represented in other provinces of South Africa through regional offices.

## 2 INVITATION FOR QUOTATION

Quotations are hereby invited for the supply and installation of green energy irrigation system to the CSIR.

## 3 SPECIFICATION

The more detailed specification is outlined under **Annexure A**

## 4 PRICING REQUIREMENTS

- 4.1 Pricing must be provided in South African Rand (including all applicable taxes less all unconditional discounts).
- 4.2 Prices that are subject to escalation and exchange rate fluctuations are to be clearly indicated, with the currency and ROE used in the quotation must be clearly indicated.
- 4.3 Price should include additional cost elements such as freight, insurance until acceptance, duty where applicable, etc.
- 4.4 Payment will be according to the [CSIR Payment Terms and Conditions](#).
- 4.5 Please provide a detail pricing using a Pricing Schedule outlined under **Annexure B**.

**Bidders are to price their quotations using the Pricing Schedule. Explanatory notes must be provided in the quotation when deviating from the Pricing Schedule.**

## 5 RETURNABLES

Returnables are required for evaluation purposes. Bidders' responses will be evaluated based on compliance with the listed administration and mandatory bid requirements. The bidder(s) proposal may be disqualified for non-submission of any of the documents.

### 5.1 Essential Returnable Documents

Without limiting the generality of the CSIR's other critical requirements for this Bid, bidder(s) must submit the documents listed in Table 1 below. All documents must be completed and signed by the duly authorized representative of the prospective bidder(s).

Please confirm submission of the Essential Returnable Documents detailed below by

so indicating [Yes or No] in the table below:

*Table 1*

| ESSENTIAL RETURNABLE DOCUMENTS                                                            | SUBMITTED<br>[Yes/No] |
|-------------------------------------------------------------------------------------------|-----------------------|
| Annexure C: Standard Bidding Document (SBD) 1 Form                                        |                       |
| Annexure D: Standard Bidding Document (SBD) 4 Form                                        |                       |
| Annexure E: Preference Points Award Form (Mandatory documents to claim preference points) |                       |
| CIDB registration certificate/proof, level 2SH or higher grading designation.             |                       |
| Proof of ECSA registered Engineer to supervise the installation.                          |                       |

## 5.2 Mandatory Returnable Documents

Failure to submit **all** Mandatory Returnable Documents by the closing date and time of this RFQ will result in a Respondent's disqualification. Bidders are therefore urged to ensure that all these documents are returned with their RFQ.

Please confirm submission of the Mandatory Returnable Documents detailed below by so indicating [Yes or No] in the table below:

*Table 2*

| MANDATORY RETURNABLE DOCUMENTS | SUBMITTED<br>[Yes/No] |
|--------------------------------|-----------------------|
| Annexure B: Pricing Schedules  |                       |

## 6 EVALUATION PROCESS AND CRITERIA

The RFQ will be evaluated as per the following:

### Phase 1 – Elimination Criteria

The bidders will be evaluated on the elimination criteria as stated in Point 6.1 below. Bidders that are eliminated during this phase will not be evaluated further on price and preference points.

### Phase 2 – Price and Preference Points Evaluation

Bidders will be evaluated as per the preference points system stated in point 6.2 below.

#### 6.1 Elimination Criteria

Bidders will be eliminated if they fail to provide the following information:

- Bidder that submits late bids will not be considered.
- Bidder that submits to the incorrect location or email address will not be considered.
- Bidder that is listed on the NT database of restricted suppliers will not be

considered.

- d) Bidder that is registered on the NT Register of Tender Defaulters will not be considered.
- e) Bidder that did not submit mandatory returnable documents as listed on paragraph 5.2 (**Table 2**).
- f) Bidder that fails to meet the specification requirements will not be considered.

## **6.2 Preferential Points System Evaluation Criteria**

Selection of suppliers will be based on the 80/20 preference point system as stipulated in **Annexure E: Preference Points Award Form**.

## **7 OBJECTIVE CRITERIA**

The CSIR reserves the right to award this tender to a bidder that did not score the highest total number of points in accordance with Section (2) (1) (f) of the PPPFA (Act 5 of 2000)", under the following conditions:

- The directors, shareholders or officers of the bidder must not be formally charged of fraudulent or illegal conduct which could harm the CSIR's reputation by associating with the bidder.

## **8 SUBMISSION REQUIREMENTS**

- 8.1 All quotations must be submitted electronically to [tender@csir.co.za](mailto:tender@csir.co.za)
- 8.2 Respondents must use the RFQ number and RFQ Description as the subject reference number when submitting their bids.
- 8.3 The email and file sizes must not exceed a total of 25MB per email.
- 8.4 Documents submitted via cloud solutions such as: WeTransfer, Google Drive, Dropbox, etc. will not be considered.
- 8.5 The naming / labelling syntax of files or documents must be short and simple.

## **9 MEDIUM OF COMMUNICATION**

All documentation submitted in response to this RFQ must be in English.

## **10 CORRECTNESS OF RESPONSES**

- 10.1 The bidder must confirm satisfaction regarding the correctness and validity of their proposal and that all prices and rates quoted cover all the work/items specified in the RFQ. The prices and rates quoted must cover all obligations under any resulting contract.
- 10.2 The bidder accepts that any mistakes regarding prices and calculations will be at their own risk.

## **11 VERIFICATION OF DOCUMENTS**

- 11.1 Bidders should check the numbers of the pages to satisfy themselves that none are missing or duplicated. No liability will be accepted by the CSIR in regard to anything arising.
- 11.2 Pricing schedule and specific goals credentials should be submitted with the RFQ response.

## **12 PREPARATION COSTS**

The Bidder will bear all its costs in preparing, submitting and presenting any response or Tender to this bid and all other costs incurred by it throughout the bid process. Furthermore, no statement in this bid will be construed as placing the CSIR, its employees or agents under any obligation whatsoever, including in respect of costs, expenses or losses incurred by the bidder(s) in the preparation of their response to this bid.

## **13 OTHER TERMS AND CONDITIONS**

- 13.1 No bidder shall under any circumstances offer, promise or make any gift, payment, loan, reward, inducement, benefit or other advantage, which may be construed as being made to solicit any favour, to any CSIR employee or its representatives. Such an act shall constitute a material breach of the Agreement and the CSIR shall be entitled to terminate the Agreement forthwith, without prejudice to any of its rights.
- 13.2 Bidders shall not assume that information and/or documents supplied to CSIR, at any time prior to this request, are still available to CSIR, and shall consequently not make any reference to such information document in its response to this request.
- 13.3 Changes by a bidder to its submission will not be considered after the closing date and time.
- 13.4 Bidders confirm that by submitting a tender, they confirm that I am satisfied with regards to the correctness and validity of my quotation; that the price(s) and rate(s) quoted cover all the services specified in the quotation documents; that the price(s) and rate(s) cover all my obligations and I accept that any mistakes regarding price(s) and rate(s) and calculations will be at my own risk.
- 13.5 Bidders further confirm that by submitting a tender, they accept to take accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on them under this RFQ as the principal liable for the due fulfilment of this RFQ process.
- 13.6 No goods and/or services shall be delivered to the CSIR without an official CSIR Purchase order. CSIR purchase order number must be quoted on the invoice. Invoices without CSIR

purchase order numbers will be returned to the supplier.

## **14 SPECIAL CONDITIONS**

The CSIR reserves the right to

- 14.1. Extend the closing date of this RFQ;
- 14.2. Correct any mistakes at any stage of the tender that may have been in the Bid documents or occurred at any stage of the tender process;
- 14.3. Verify any information contained in the bidder's submission;
- 14.4. Request documentary proof regarding the bidder's submission;
- 14.5. Carry out site inspections, product evaluations or explanatory meetings in order to verify the nature and quality of the product/service offered by the bidder(s) or verify any information whether before or after the adjudication of this RFQ;
- 14.6. Award this tender to a bidder that did not score the highest total number of points, only in accordance with Section 2(1)(f) of the PPPFA (Act 5 of 2000);
- 14.7. Request audited financial statements or other documents for the purpose of a due diligence exercise to determine if the bidder will be able to execute the contract;
- 14.8. Award this RFQ as a whole or in part;
- 14.9. Award this RFQ to multiple bidders;
- 14.10. Cancel and/or terminate the tender process at any stage, including after the Closing Date and/or after presentations have been made, and/or after tenders have been evaluated and/or after the preferred bidder(s) have been notified of their status as such;
- 14.11. Post tender negotiate on any elements on the bid, including but not limited to technical, transformation, price, and contractual terms and conditions.;
- 14.12. Not to award a contract to a bidder who is associated with a security breach that materially adversely affects other entities or if any directors or officers of a bidder are formally charged of fraudulent or illegal conduct which, would harm the CSIR's reputation by its continued association with the bidder.

## **15 CONFIDENTIALITY**

Some of the information contained in the Tender Documents may be of a confidential nature and must only be used for purposes of responding to this RFQ. This confidentiality clause extends to bidder partners whom you may decide to involve in preparing a response to this RFQ.

Except as may be required by operation of law, by a court or by a regulatory authority having appropriate jurisdiction, no information contained in or relating to this bid or a bidder's tender(s) will be disclosed by any bidder or other person not officially involved with the CSIR's examination and evaluation of a Tender.

No part of the bid may be distributed, reproduced, stored or transmitted, in any form or by any means, electronic, photocopying, recording or otherwise, in whole or in part except for

the purpose of preparing a Tender. This bid and any other documents supplied by the CSIR remain proprietary to the CSIR and must be promptly returned to the CSIR upon request together with all copies, electronic versions, excerpts or summaries thereof or work derived there from.

Throughout this bid process and thereafter, bidder(s) must secure the CSIR's written approval prior to the release of any information that pertains to (i) the potential work or activities to which this bid relates; or (ii) the process which follows this bid. Failure to adhere to this requirement may result in disqualification from the bid process and civil action.

## **16 PROTECTION OF PERSONAL INFORMATION**

- 16.1 Each Party consents to the other Party holding and processing "personal information" (as defined in the POPI Act) relating to it for legal, personnel, administrative and management purposes (including, if applicable, any "special personal information" relating to him/her, as defined in the POPI Act). Notwithstanding the generality of the aforesaid, each Party hereby undertakes to comply with all relevant provisions of the POPI Act and any other applicable data protection laws. The Client further agrees to comply with all CSIR's reasonable internal governance requirements pertaining to data protection.
- 16.2 Each Party consents to the other Party making such information available to those who provide products or services to such parties (such as advisers, regulatory authorities, governmental or quasi-governmental organisations and potential purchasers of such Party or any part of their business).
- 16.3 The Client consents to the transfer of such information to CSIR's business contacts outside South Africa in order to further its business interests.
- 16.4 While performing any activity where a Party is handling personal information as a "responsible party" (as defined in the POPI Act), each Party undertakes that it will process the personal information strictly in accordance with the terms of the POPI Act, this Contract, and the other Party's instructions from time to time, and take appropriate operational measures to safeguard the data against any unauthorised access.
- 16.5 Each Party acknowledges that in the course of conducting business with each other, each Party intends to maintain and process personal information about the other Party in an internal database. By signing this Contract, each Party consents to the maintenance and processing of such personal information.
- 16.6 Where relevant, the Client shall procure that all of its personnel, agents, representatives, contractors, sub-contractors and mandataries shall comply with the provisions of this clause 16 (Personal Information). The CSIR shall be entitled on reasonable notice to conduct an inspection or audit Client's compliance with the requisite POPI Act safeguards.

## **17 INDEMNITY**

If a bidder breaches the conditions of this bid and, as a result of that breach, the CSIR incurs costs or damages (including, without limitation, the cost of any investigations, procedural

impairment, repetition of all or part of the bid process and/or enforcement of intellectual property rights or confidentiality obligations), then the bidder indemnifies and holds the CSIR harmless from any and all such costs which the CSIR may incur and for any damages or losses the CSIR may suffer.

## **18 TAX COMPLIANCE**

No tender shall be awarded to a bidder who is not tax compliant. If a recommended bidder is not tax compliant, the bidder will be notified in writing of their non-compliant status and the bidder will be requested to submit written proof from SARS of their tax compliant status or proof that they have made an arrangement to meet their outstanding tax obligations within seven (7) working days. Should they fail to do so CSIR will reject their bid.

The CSIR reserves the right to withdraw an award made, or cancel a contract concluded with a successful bidder in the event that it is established that such bidder was in fact not tax compliant at the time of the award or has submitted a fraudulent Tax Clearance Certificate to the CSIR, or whose verification against the Central Supplier Database (CSD) proves non-compliant. The CSIR further reserves the right to cancel a contract with a successful bidder in the event that such bidder does not remain tax compliant for the full term of the contract.

## **19 LIMITATION OF LIABILITY**

A bidder participates in this bid process entirely at its own risk and cost. The CSIR shall not be liable to compensate a bidder on any grounds whatsoever for any costs incurred or any damages suffered as a result of the Bidder's participation in this Bid process.

## **20 MISREPRESENTATIONS DURING THE LIFECYCLE OF THE CONTRACT**

- 20.1 The bidder should note that the terms of its Tender will be incorporated in the proposed contract by reference and that the CSIR relies upon the bidder's Tender as a material representation in making an award to a successful bidder and in concluding an agreement with the bidder.
- 20.2 It follows therefore that misrepresentations in a Tender may give rise to service termination and a claim by the CSIR against the bidder notwithstanding the conclusion of the Service Level Agreement between the CSIR and the bidder for the provision of the Service in question. In the event of a conflict between the bidder's proposal and the Service Level Agreement concluded between the parties, the Service Level Agreement will prevail.

## **21 DISCLAIMER**

This RFQ is a request for Quotations only and not an offer document. Answers to this RFQ must not be construed as acceptance of an offer or imply the existence of a contract between the parties. By submission of its proposal, bidders shall be deemed to have satisfied themselves with and to have accepted all Terms & Conditions of this RFQ. The CSIR makes no representation, warranty, assurance, guarantee or endorsements to bidder concerning the RFQ, whether with regard to its accuracy, completeness or otherwise and the CSIR shall have no liability towards the bidder or any other party in connection therewith.

## **22 NATIONAL TREASURY CENTRAL SUPPLIER DATABASE**

- 22.1 Bidders are required to be registered on the Central Supplier Database and the National Treasury shall verify the bidder's tax compliance status through the Central Supplier Database. Registrations can be completed online at: [www.csd.gov.za](http://www.csd.gov.za);
- 22.2 Where Consortia / Joint Ventures / Sub-contractors are involved, each party must be registered on the Central Supplier Database and their tax compliance status will be verified through the Central Supplier Database.

## Annexure A

### Specifications

Requirements are for a simple, cost effective, green energy efficient irrigations items for the following site:

#### **White River, Mpumalanga – 2 ha**

The prospective service provider will be expected to draw water from the existing mainline (gravity fed from a canal) at the field for irrigation purposes, using the items listed below:

- 20m pipe (HDPE - Class 6, 75 mm) and including fittings with sand filter and installation from the main water supply line
- A Solar PV pump and motor 10 m<sup>3</sup>/hr (pump 1) in a brick / concrete housing, with solar panels on a steel structure (The number of solar panels will need to be determined by the supplier, based on the pump capacity):
  - Standard / Typical Pump pressure of approximately 2 - 4 bar with the aim to achieve a water pump flow of approximately 10 m<sup>3</sup>/hr, this pump is for irrigating the field
  - Jojo water tanks 2 x 10 000 L with mechanical float valves, and a concrete slab of 20 m<sup>2</sup> including and anchor mechanism of the tanks firmly to the slab
- Main water supply at field - Solar PV pump and motor 10 m<sup>3</sup>/hr (pump 2) in a brick / concrete housing, with solar panels on a steel structure (The number of solar panels will need to be determined by the supplier, based on the pump capacity):
  - Standard / Typical Pump pressure of approximately 2 - 4 bar with the aim to achieve a water pump flow of approximately 10 m<sup>3</sup>/hr, this pump is for irrigating the field
  - Manual water meter is required to determine the consumption of irrigation water for the 2 ha area
  - Compatible highly effective water filter unit
  - Dosatron D9GL2 in-line fertigation unit (injector type) with 500 L max capacity fertigation stock tank and related components
  - Ground mounted steel structure for the solar panels
  - All electrical components and solar DC cable and irrigation control box
  - Pump 1 and pump 2 can be in the same housing

- Pressure compensated driplines, irrigation pipes of a 17 mm outside diameter (Netafim UniRam™ AS XR, wall thickness of 1.2 mm, dripper spacing of 30 cm) (See Annexure G for the dripline specification, highlighted in red), for 2 ha area capable of delivering water at 1.6 L/hr, including all the necessary pipe works, fittings, sub-mains, hydrants and components suitable for irrigating the 2 ha area with 120 000 plants (plant density is 60 000 plants/ha), see Annexure H for the irrigation layout
- Fencings and razor wire security around the solar panels and pump house etc.
- The prospective service provider must provide a design of the irrigation system specific to this site together with a bill of quantities.



**Additional specification requirements:**

- Dripper pipes equivalent to equivalent or similar to UNIRAM quality will be considered - bidder must submit their quotation with a brochure detailing the product specification.
- Bidder must supply and deliver all items listed on the specs, including the complete installation and testing of the green energy efficient irrigation system at the site.
- Upon completion and testing, the bidder must provide a Certificate of Compliance, confirming that the irrigation system complies with the necessary irrigation standards.
- The tenderer must have an individual who is a ECSA (Engineering Council of South Africa) registered professional Engineer preferably in Agriculture to supervise the installation.
- The bidder must provide warranty / guaranty of all items, components and workmanship of the entire green energy irrigation system for a period of 1 year. These must include all physical, technical, mechanical, and electrical components including solar panels etc.
- The bidder must provide a one (1) year after sales service / maintenance plan for the entire, installed green energy efficient irrigation system. In cases of breakdowns or system problems, all issues must be dealt with within 48 hours, free of any costs to the CSIR or the ARC.
- The bidder must provide a full day's training to the assigned operators of the green energy efficient irrigation system:
  - i) The complete operation of the entire system,
  - ii) Routine maintenance procedures,
  - iii) What to do and what not to do.
- Bidder must have a valid CIDB registration certificate/proof, level 2SH or higher grading designation.
- Bidder should indicate an estimated time for commencement and completion of the installation, from the time the official order is placed.
- **Bidders must indicate a separate line in their quotation for labour/installation cost.**

## Annexure B

### Pricing Schedule for White River

[illegible]

**Annexure C**  
**Standard Bidding Document (SBD) 1**

**PART A: INVITATION TO BID**

|                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                 |                  |                                                                                   |                                                          |                                                                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| <b>YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE CSIR</b>                                                                                                                                                                                                                                                              |                                                                                                                                                                 |                  |                                                                                   |                                                          |                                                                                                          |
| BID NUMBER:                                                                                                                                                                                                                                                                                                                    | RFQ 6467.1-12-03-2025                                                                                                                                           | CLOSING DATE:    | 30 June 2025                                                                      | CLOSING TIME:                                            | 16:30                                                                                                    |
| DESCRIPTION                                                                                                                                                                                                                                                                                                                    | <b>Request for Quotation (RFQ) for the supply and installation of green energy irrigation system to the CSIR in White River, Mpumalanga (Re-advertisement).</b> |                  |                                                                                   |                                                          |                                                                                                          |
| <b>BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT (STREET ADDRESS)</b>                                                                                                                                                                                                                                     |                                                                                                                                                                 |                  |                                                                                   |                                                          |                                                                                                          |
| The CSIR requires that all tender submissions be submitted electronically to <a href="mailto:tender@csir.co.za">tender@csir.co.za</a> . Should tender file size exceed 25MB, bidders submit tender in multiple emails. Use the tender number RFQ 6467.1-12-03-2025 and description of the tender as the subject on your email. |                                                                                                                                                                 |                  |                                                                                   |                                                          |                                                                                                          |
| <b>BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO</b>                                                                                                                                                                                                                                                                          |                                                                                                                                                                 |                  | <b>TECHNICAL ENQUIRIES MAY BE DIRECTED TO:</b>                                    |                                                          |                                                                                                          |
| CONTACT PERSON                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                 | CONTACT PERSON   |                                                                                   |                                                          |                                                                                                          |
| TELEPHONE NUMBER                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                 | TELEPHONE NUMBER |                                                                                   |                                                          |                                                                                                          |
| FACSIMILE NUMBER                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                 | FACSIMILE NUMBER |                                                                                   |                                                          |                                                                                                          |
| E-MAIL ADDRESS                                                                                                                                                                                                                                                                                                                 | <a href="mailto:tender@csir.co.za">tender@csir.co.za</a>                                                                                                        | E-MAIL ADDRESS   |                                                                                   | <a href="mailto:tender@csir.co.za">tender@csir.co.za</a> |                                                                                                          |
| <b>SUPPLIER INFORMATION</b>                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                 |                  |                                                                                   |                                                          |                                                                                                          |
| NAME OF BIDDER                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                 |                  |                                                                                   |                                                          |                                                                                                          |
| POSTAL ADDRESS                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                 |                  |                                                                                   |                                                          |                                                                                                          |
| STREET ADDRESS                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                 |                  |                                                                                   |                                                          |                                                                                                          |
| TELEPHONE NUMBER                                                                                                                                                                                                                                                                                                               | CODE                                                                                                                                                            |                  | NUMBER                                                                            |                                                          |                                                                                                          |
| CELLPHONE NUMBER                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                 |                  |                                                                                   |                                                          |                                                                                                          |
| FACSIMILE NUMBER                                                                                                                                                                                                                                                                                                               | CODE                                                                                                                                                            |                  | NUMBER                                                                            |                                                          |                                                                                                          |
| E-MAIL ADDRESS                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                 |                  |                                                                                   |                                                          |                                                                                                          |
| VAT REGISTRATION NUMBER                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                 |                  |                                                                                   |                                                          |                                                                                                          |
| SUPPLIER COMPLIANCE STATUS                                                                                                                                                                                                                                                                                                     | TAX COMPLIANCE SYSTEM PIN:                                                                                                                                      |                  | OR                                                                                | CENTRAL SUPPLIER DATABASE No:                            | MAAA                                                                                                     |
| <b>1</b> ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?                                                                                                                                                                                                                         | <input type="checkbox"/> Yes <input type="checkbox"/> No<br>[IF YES ENCLOSE PROOF]                                                                              |                  | <b>2</b> ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED? |                                                          | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><br>[IF YES, ANSWER THE QUESTIONNAIRE BELOW] |
| <b>QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS</b>                                                                                                                                                                                                                                                                              |                                                                                                                                                                 |                  |                                                                                   |                                                          |                                                                                                          |
| IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?                                                                                                                                                                                                                                                                |                                                                                                                                                                 |                  |                                                                                   |                                                          | <input type="checkbox"/> YES                                                                             |

☐ NO

DOES THE ENTITY HAVE A BRANCH IN THE RSA?

☐ YES ☐ NO

DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?

☐ YES ☐ NO

DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?

☐ YES ☐ NO

IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?

☐ YES ☒ NO

**THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 BELOW.**

## PART B: TERMS AND CONDITIONS FOR BIDDING

### 1. BID SUBMISSION:

- 1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.
- 1.2. **ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED–(NOT TO BE RE-TYPED) OR IN THE MANNER PRESCRIBED IN THE BID DOCUMENT.**
- 1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT, 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.
- 1.4. **THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (SBD7).**

### 2. TAX COMPLIANCE REQUIREMENTS

- 2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
- 2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VERIFY THE TAXPAYER'S PROFILE AND TAX STATUS.
- 2.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) PIN MAY BE MADE VIA E-FILING THROUGH THE SARS WEBSITE [WWW.SARS.GOV.ZA](http://WWW.SARS.GOV.ZA).
- 2.4 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
- 2.5 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
- 2.6 WHERE NO TCS PIN IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.
- 2.7 NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, COMPANIES WITH DIRECTORS WHO ARE PERSONS IN THE SERVICE OF THE STATE, OR CLOSE CORPORATIONS WITH MEMBERS PERSONS IN THE SERVICE OF THE STATE."

**NB: FAILURE TO PROVIDE / OR COMPLY WITH ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.**

SIGNATURE OF BIDDER:

.....

CAPACITY UNDER WHICH THIS BID IS SIGNED:

.....

(Proof of authority must be submitted e.g. company resolution)

DATE:

.....

## Annexure D Standard Bidding Document (SBD) 4

### BIDDER'S DISCLOSURE

#### 1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

#### 2. Bidder's declaration

- 2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest<sup>1</sup> in the enterprise, employed by the state? YES ☐ / NO ☐

- 2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

| Full Name | Identity Number | Name of State institution |
|-----------|-----------------|---------------------------|
|           |                 |                           |
|           |                 |                           |
|           |                 |                           |
|           |                 |                           |
|           |                 |                           |
|           |                 |                           |

- 2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? YES ☐ / NO ☐

<sup>1</sup> the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

2.2.1 If so, furnish particulars:

.....  
 .....

**2.3** Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract? YES / ☒ NO ☐

2.3.1 If so, furnish particulars:

.....  
 .....

### 3 DECLARATION

I, the undersigned, (name) ..... in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

- 3.1 I have read and I understand the contents of this disclosure;
- 3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;
- 3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium<sup>2</sup> will not be construed as collusive bidding.
- 3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.
- 3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
- 3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.
- 3.6 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of

<sup>2</sup> Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

|           |                |
|-----------|----------------|
| .....     | .....          |
| Signature | Date           |
| .....     | .....          |
| Position  | Name of bidder |

## Annexure E

### Preference Points Award Form in Terms of the Preferential Procurement Regulations 2022

This preference form must form part of all bids invited. It contains general information and serves as a claim form for the preference points allocated on the basis of specific goals outlined in point 3 below.

**NB: BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF SPECIFIC GOALS, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022**

#### 1. GENERAL CONDITIONS

- 1.1 The following preference point systems are applicable to this bid:
- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included).
- 1.2 Points for this bid shall be awarded for:
- (a) Price; and
  - (b) Preference Points based on specific goals.
- 1.3 The maximum points for this bid are allocated as follows:

|                                                                     | POINTS     |
|---------------------------------------------------------------------|------------|
| <b>PRICE</b>                                                        | 80         |
| <b>Preference Points</b>                                            | 20         |
| <b>Total points for Price and Preference Points must not exceed</b> | <b>100</b> |

- 1.4 Failure on the part of a bidder to submit proof of preference points together with the bid, will be interpreted to mean that preference points are not claimed.
- 1.5 The CSIR reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the CSIR.

#### 2. POINTS AWARDED FOR PRICE

##### 2.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

A maximum of 80 or 90 points is allocated for price on the following basis:

$$P_s = 80 \left( 1 - \frac{P_t - P_{\min}}{P_{\min}} \right) \quad \text{or} \quad P_s = 90 \left( 1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where

Ps = Points scored for price of bid under consideration  
 Pt = Price of bid under consideration  
 Pmin = Price of lowest acceptable bid

### 3. PREFERENCE POINTS AWARDED

- 3.1 In terms of Regulation 4 (2) and 4 (2) of the Preferential Procurement Regulations, preference points may be awarded to a bidder for the specific goal specified for the tender in accordance with the table below:
- 3.2 Specific goals must be determined per tender.

| Specific Goals  | Preference Points |
|-----------------|-------------------|
| Black Ownership | 20                |
| <b>Total</b>    | <b>20</b>         |

- 3.3 Total preference points per specific goal to be determined per tender.

- 1.3.1. Total preference points per specific goal to be awarded as follows:

- 1.3.1.1. Preferential points for black ownership will be awarded as follows:

| Black Ownership                           | % of Preferential points |
|-------------------------------------------|--------------------------|
| Bidder with 100% black ownership          | 100%                     |
| Bidder with 51% to 99% black ownership    | 50%                      |
| Bidder with less than 51% black ownership | 0%                       |

### 1.4. Joint Ventures, Consortiums and Trusts

A trust, consortium or joint venture<sup>3</sup> will qualify for preference points as a legal entity (Incorporated), provided that the entity submits its valid B-BBEE certificate. Only valid BBEE certificates issued by SANAS accredited verification agency will be considered for allocation of points.

A trust, consortium or joint venture will qualify for preference points as an unincorporated entity, provided that the entity submits their consolidated B-BBEE scorecard as if they were a group structure and that such a consolidated B-BBEE scorecard is prepared for every separate bid. Only valid consolidated BBEE certificates issued by SANAS accredited verification agency will be considered for allocation of points.

Bidders must submit concrete proof of the existence of joint ventures and/or consortium arrangements. The CSIR will accept signed agreements as acceptable proof of the existence of a joint venture and/or consortium arrangement. Furthermore, in bids where unincorporated joint venture and/or

<sup>3</sup> Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

consortium/sub-contractors are involved, each party must submit a separate TCS PIN and CSD number.

The joint venture and/or consortium agreements must clearly set out the roles and responsibilities of the Lead Partner and the joint venture and/or consortium party. The agreement must also clearly identify the Lead Partner, who shall be given the power of attorney to bind the other party/parties in respect of matters pertaining to the joint venture and/or consortium arrangement.

## 1.5. Sub-contracting

A bidder must not be awarded preference points if it is indicated in the tender documents that such a bidder intends sub- contracting more than 25% of the value of the contract to any other enterprise that does not qualify for at least the points that such a bidder qualifies for, unless the intended sub-contractor is an EME that has the capability and ability to execute the sub-contract.

A bidder awarded a contract may not sub-contract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the bidder concerned, unless the contract is sub-contracted to an EME that has the capability and ability to execute the sub-contract.

## 2. BID DECLARATION

Bidders who claim points in respect of specific goals **must** submit the following documents:

| Mandatory documents to claim preference points                                                                                                                                                      | Submitted |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------|
|                                                                                                                                                                                                     | Yes<br>√  | No<br>√ |
| Valid copy of BBEE certificate/ sworn affidavit to claim Black Ownership, Black Woman Ownership, Black Youth Ownership, Disability Ownership and RDP (EMEs and QSEs) preference points <sup>4</sup> |           |         |

### DECLARATION WITH REGARD TO COMPANY/FIRM

Name \_\_\_\_\_ of  
company/firm:.....  
....

VAT \_\_\_\_\_ registration  
number:.....

<sup>4</sup> In case of unincorporated trust, consortium or joint venture, they must submit their consolidated B-BBEE scorecard with submitting their **individual B-BBEE Certificate or Sworn Affidavit**, and each party must submit a separate TCS PIN and CSD number.  
In case of sub-contracting both parties must submit copies of their valid BBEE certificates

number:.....

I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the documents submitted to claim preference points based on the specific goals are valid, and I / we acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 3 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 3, the contractor may be required to furnish further documentary proof to the satisfaction of the CSIR that the awarded are correct;
- iv) If any document is obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the CSIR may, in addition to any other remedy it may have –
  - (a) disqualify the person from the bidding process;
  - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
  - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
- (d) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and
- (e) forward the matter for criminal prosecution.
- v) If the CSIR is of the view that a bidder submitted false information regarding a specific goal, it must—
  - (a) inform the bidder accordingly; and
  - (b) give the bidder an opportunity to make representations within 14 days as to why the tender may not be disqualified or, if the tender has already been awarded to the bidder, the contract should not be terminated in whole or in part.
- vi) After considering the representations referred to in subregulation (v)(b), the CSIR may, if it concludes that such information is false—
  - (a) disqualify the bidder or terminate the contract in whole or in part; and
  - (b) if applicable, claim damages from the bidder.

WITNESSES

1. ....

2. ....

.....  
SIGNATURE(S) OF BIDDERS(S)

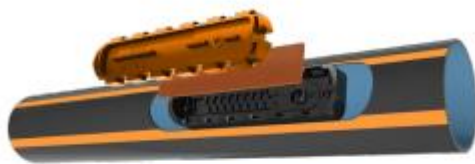
DATE: .....

ADDRESS.....

## Annexure F

# UniRam™ AS XR

Integral pressure-compensated, continuously self-flushing and anti-siphon mechanism dripper, ideal for permanent sub surface crops applications with extra root protection.



## / Benefits & Features

- **Extra root intrusion protection (XR)** Drippers are protected against root intrusion better than all other options, utilizing a patented root inhibitor within the dripper cover that prevents root intrusion into the dripper labyrinth. Better protection against root intrusion without reliance on chemicals. Long-lasting protection due to non-migrating active ingredients embedded in the dripper cover.
- **Pressure-compensated** Precise and equal amounts of water delivered over a broad pressure range, ensuring 100% uniformity of water and nutrient distribution along laterals.
- **Anti-siphon mechanism** Prevents contaminants from being drawn into the dripper, making it ideal for sub-surface applications.
- **Continuously self-flushing** Flushes debris throughout operation, while ensuring constant dripper operation even in challenging water quality.
- **Physical root barrier** Better protection against root intrusion, utilising unique dripper design that creates physical barriers protecting the dripper from root growth into its labyrinth.
- **Wide filtration area** Ensures optimal performance even under harsh water conditions, preventing the entrance of sediment into the labyrinths.
- **Wide water passages** TurboNet™ labyrinth ensures wide water passages, large deep and wide cross-section that improves clogging resistance. The water is drawn into the dripper from the stream center, preventing the entrance of sediments into the drippers.

## Annexure G

### / Specifications

- ✓ Pressure-compensated range: 0.5 - 4.0 bar.
- ✓ Largest filter in the industry. Recommended filtration: depending on dripper flow rate. Filtration method selected based on the kind and concentration of dirt particles contained in the water. Wherever sand exceeding 2 ppm exists in the water, a Hydrocyclone shall be installed before the main filter. Where sand/silt/clay solids exceed 100 ppm, pre treatment shall be applied following Netafim expert instructions.
- ✓ Double TurboNet™ labyrinth with large water passage.
- ✓ Weldable into thick wall driplines (1.00, 1.20 mm).
- ✓ Injected dripper, very low CV with injected silicon diaphragm.
- ✓ High UV resistant. Resistant to standard nutrients used in agriculture.
- ✓ Meets ISO 9261 Standards.

#### → Drippers technical data

| Flow rate*<br>(l/h) | Working pressure<br>range (bar) | Water passages dimensions<br>width-depth-length (mm) | Filtration<br>area (mm²) | Constant<br>K | Exponent*<br>X | Recommended<br>filtration (micron) |
|---------------------|---------------------------------|------------------------------------------------------|--------------------------|---------------|----------------|------------------------------------|
| 0.70                | 0.5 – 4.0                       | 0.70 x 0.65 x 40                                     | 110                      | 0.70          | 0              | 100                                |
| 1.00                |                                 | 0.83 x 0.74 x 40                                     | 130                      | 1.00          | 0              | 100                                |
| 1.60                |                                 | 1.09 x 0.76 x 40                                     | 130                      | 1.60          | 0              | 130                                |
| 2.30                |                                 | 1.26 x 0.93 x 40                                     | 130                      | 2.30          | 0              | 130                                |
| 3.50                |                                 | 1.59 x 1.07 x 40                                     | 150                      | 3.50          | 0              | 130                                |

\* Within working pressure range

#### → Driplines technical data

| Model | Inside diameter<br>(mm) | Wall thickness<br>(mm) | Outside diameter<br>(mm) | Max. working<br>pressure (bar) | Max. flushing<br>pressure (bar) | KD   |
|-------|-------------------------|------------------------|--------------------------|--------------------------------|---------------------------------|------|
| 17010 | 14.20                   | 1.00                   | 16.40                    | 3.5                            | 4.6                             | 1.20 |
| 17012 | 14.20                   | 1.20                   | 17.00                    | 4.0                            | 5.2                             | 1.20 |
| 20010 | 17.50                   | 1.00                   | 19.50                    | 3.5                            | 4.6                             | 0.40 |
| 20012 | 17.50                   | 1.20                   | 19.90                    | 4.0                            | 5.2                             | 0.40 |

#### → Driplines package data (on coil)

| Model | Wall thickness<br>(mm) | Distance between<br>drippers (m) | Coil length<br>(m) | Average* coil<br>weight (kg) | Coils in a 40 feet<br>container (units) | Total in a 40 feet<br>container (m) |
|-------|------------------------|----------------------------------|--------------------|------------------------------|-----------------------------------------|-------------------------------------|
| 17010 | 1.00                   | 0.15 to 1.00                     | 500                | 22.7                         | 330                                     | 165 000                             |
| 17012 | 1.20                   | 0.15 to 1.00                     | 400                | 21.4                         | 352                                     | 140 800                             |
| 20010 | 1.00                   | 0.15 to 1.00                     | 300                | 17.4                         | 330                                     | 990 00                              |
| 20012 | 1.20                   | 0.15 to 1.00                     | 300                | 20.2                         | 330                                     | 990 00                              |

\* Calculated weight average. For further details see "Average Coil Weight Disclaimer"

## Annexure H

distance between plant = 0.3m

distance between row's = 0.6m

$$\text{Plant density} = 0.3\text{m} \times 0.6\text{m} = 0.18\text{m}^2$$

$$\begin{aligned}\text{Total number of plants / ha}^{-1} &= \frac{10\,000\text{m}^2 (1\text{ha}^{-1})}{0.18\text{m}^2} \\ &= 55\,555 \text{ plants / ha}^{-1}\end{aligned}$$

