e-TENDER NOTICE

Item/percentage rate sealed Quotation is hereby invited by the Director, DCR, Puttur from the eligible agencies for doing “Software development for water management and leaf analysis based nutrient management in cashew and offline versions of the mobile apps.” The agencies must have valid IT-PAN/VAT and GST registration number for undertaking the work mentioned below:

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Work Description</th>
<th>Qty.</th>
<th>EMD Amount</th>
<th>Time of Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Software development for water management and leaf analysis based nutrient management in cashew and offline versions of the mobile apps.</td>
<td>1 No. (Complete Work)</td>
<td>Rs. 8000/-</td>
<td>45 days</td>
</tr>
</tbody>
</table>

Last date & time for submission of e-tender : up to 10:30 hours of 12-02-2020
Opening of e-tender (Technical bids) : 10:30 hours of 13-02-2020

Desirous and eligible agencies for details & submission to e-tender may visit http://eprocure.gov.in
Details are also available in the Institute website : https://cashew.icar.gov.in
NOTICE FOR INVITING TENDER (NIT)

No.F.677(RKVV)/2020-Stores  Dated: 22-01-2020

<table>
<thead>
<tr>
<th>Name of the Institute</th>
<th>ICAR-Directorate of Cashew Research, Puttur 574202</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place of Work</td>
<td>ICAR-Directorate of Cashew Research, Puttur 574 202</td>
</tr>
<tr>
<td>Date of Release of Tender</td>
<td>22 January 2020</td>
</tr>
<tr>
<td>Last Date of Submission of bids</td>
<td>12 February 2020, 10.30 Hrs</td>
</tr>
<tr>
<td>Date of opening of Technical bids</td>
<td>13 February 2020, 10.30 Hrs</td>
</tr>
<tr>
<td>Place of opening of bids</td>
<td>ICAR-Directorate of Cashew Research, Puttur 574 202</td>
</tr>
<tr>
<td>Estimated cost</td>
<td>Rs. 3.2 Lakhs</td>
</tr>
<tr>
<td>Cost of EMD (Rs.)</td>
<td>Rs. 8,000.00</td>
</tr>
<tr>
<td>Time of Completion</td>
<td>45 Days</td>
</tr>
</tbody>
</table>

Instruction for Online Bid Submission:

The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal. More information useful for submitting online bids on the CPP Portal may be obtained at: www.eprocure.gov.in.

REGISTRATION:

- Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (url: https://eprocure.gov.in/eprocure/app) by clicking on the link ‘Click here to Enroll’. Enrolment on the CPP Portal is free of charge.

- As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.

- Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.

- Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India with their profile.

- Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSCs to others, which may lead to misuse.

- Bidder then can logs into the site through the secured login by entering their user ID / password and the password of the DSC / e Token.
SEARCHING FOR TENDER DOCUMENTS:

- There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP Portal.

- Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective ‘My Tenders’ folder. This would enable the CPP Portal to intimate the bidders through SMS / E-mail in case there is any corrigendum issued to the tender document.

- The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS:

- Bidder should take into account any corrigendum published on the tender document before submitting their bids.

- Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents – including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

- Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF formats. Bid documents may be scanned with 100dpi with black and white option.

- To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, Registration certificate & License copy etc. ) has been provided to the bidders. Bidders can use ‘My Space’ area available to them to upload such documents. These documents may be directly submitted from the ‘My Space’ area while submitting a bid, and need not be uploaded repeatedly. This will lead to a reduction in the time required for bid submission process.

SUBMISSION OF BIDS:

- Bidder should log into the site well in advance for bid submission so that he/she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.

- The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.

- Bidder has to select the payment option as ‘offline’ to pay EMD as applicable and enter details of the instrument(s).

- The server time (which is displayed on the bidders’ dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the
bidders, opening of bids etc. The bidders should follow this time during bid submission.

- All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bid encryption technology. Data storage encryption of sensitive fields is done.

- The uploaded tender documents become readable only after the tender opening by the authorized bid openers.

- Upon the successful and timely submission of bids, the portal will give a successful bid submission message and a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.

ASSISTANCE TO BIDDERS:

- Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the Tender.

- Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24*7 CPP Portal Helpdesk. The contact number for the helpdesk is 1800 233 7315.

GENERAL INSTRUCTIONS TO THE BIDDERS:

- The tenders will be received online through portal https://eprocure.gov.in/eprocure/app. In the Technical Bids, the bidders are required to upload all the documents in .pdf format.

- Possession of Valid Class II/III Digital Signature Certificate (DSC) in the form of smart card/ e-Token in the company’s name is a prerequisite for registration and participating in the bid submission activities through https://eprocure.gov.in/eprocure/app. Digital Signature Certificates can be obtained from the authorized certifying agencies, details of which are available in the web site https://eprocure.gov.in/eprocure/app under the link ‘Information about DSC’. Tenderers are advised to follow the instructions provided in the ‘Instructions to the Tenderers for the e- Submission of the bids online through the Central Public Procurement Portal for e-Procurement at https://eprocure.gov.in/eprocure/app.'
Annexure I: INVITATION FOR BIDS (IFB)

ICAR-Directorate of Cashew Research, Puttur, Karnataka is the premier Research Institution with the mandate of conducting research on Cashew in the country and functioning under the administrative control of Indian Council for Agricultural Research, Ministry of Agriculture & Farmers Welfare, Government of India. ICAR-DCR invites ‘ONLINE’ bids from eligible bidders for award of work “Software development for water management and leaf analysis based nutrient management in cashew and offline versions of the mobile apps.” at ICAR-DCR, Puttur.

1. Contact information:

   ICAR-Directorate of Cashew Research, Puttur, Karnataka, India, Tel No.: EPABX: 0091- 08251 230902, 236490 E-mail: dircajures@yahoo.com, dircajures@gmail.com

2. Double bid System – Online submission through https://www.eprocure.gov.in/eprocure/app: The Double bid system will be followed for this tender. In this system, bidder must submit their offer - online in separate envelopes/packets as explained below:

   Online - Envelope No. 1: "Technical Bid" shall contain: (PDF format only)

   a. Scan copy of Demand draft towards Earnest Money Deposit of Rs. 8,000/- (Rupees eight thousand only) drawn in favour of ICAR Unit DCR, Puttur. (The Earnest Money Deposit/EMD Exemption Certificate must reach physically at the place of Opening of the Tender on or before the Due Date & Time of the Tender Submission).

   b. Technical bid details (in PDF format)

      (i) Copy of Pan Card and copy of the latest Income Tax Return.
      (ii) GST registration with validity period.
      (iii) Copy of EMD or EMD Exemption Certificate
      (iv) Duly filled Annexure III & IV
      (v) Experience Certificates related to similar works.

   c. Duly filled Technical Bid with proper seal and signature of the authorized person (with name, designation, email id & contact no.)

   d. Other documents necessary in support of eligibility criteria, brochures etc.

   e. The Technical Bid along with detailed terms and conditions, complete in all respects with proper seal and signature of authorized person with name, designation, email id and contact no.

   f. A copy of Certificate of Incorporation, Partnership Deed / Memorandum and Articles of Association / any other equivalent document showing date and place of incorporation, as applicable.

   g. Any Technical bid documents attached to ‘NIT’ will not be considered. The document should be attached only to ‘Tender Document’ file.

Note: ICAR-DCR, Puttur reserves the right to reject the bid if any of the above listed document(s) is/are not submitted and only online bid is consider.
3. Last date for submission of bids online is **12 February 2020, 10.30 Hrs** at ICAR-Directorate of Cashew Research, Puttur, Karnataka, India, Tel No.: EPABX: 0091-08251 230902, 236490 E-mail: dircajures@yahoo.com, dircajures@gmail.com

4. Technical bids will be opened - online on **13 February 2020, 10.30 Hrs** at ICAR-Directorate of Cashew Research, Puttur, Karnataka, India, Tel No.: EPABX: 0091-08251 230902, 236490 E-mail: dircajures@yahoo.com, dircajures@gmail.com

The bid must be submitted on-line. **The EMD or EMD Exemption Certificate etc. must be submitted in person or through post/ courier (ICAR-DCR, Puttur shall not be responsible for any postal delays or any other reason for not submitting the EMD etc. in the specified time and resulting in disqualification / rejection of any bid) so as to reach on or before the due date and time.**

In case bidder requires any clarifications / information, they may contact ICAR-DCR, PUTTUR address.

**Annexure II: INSTRUCTIONS TO BIDDERS (ITB)**

1. **Locations for the Work**

   The entire works as described in Schedule of Requirements must be undertaken at ICAR – Directorate Cashew Research, Puttur 574 202, Karnataka

2. **Order Placements:**

   The Work Order shall be released by: **Director, ICAR-** Directorate Cashew Research, Puttur 574 202, Karnataka
   The payments shall be released by: **Director, ICAR-** Directorate Cashew Research, Puttur 574 202, Karnataka

3. **Eligibility Criteria:**

   a. The bidders should submit the required documents/financial instruments as stipulated in para 3 of Annexure-I.
   b. The bidder must not be blacklisted by ICAR-DCR, Puttur or any other Educational/R&D/Govt. organizations. A certificate or undertaking to this effect must be submitted.

   Note: The bidders should provide sufficient documentary evidence to support the eligibility criteria. ICAR-DCR, Puttur reserves the right to reject any bid not fulfilling the eligibility criteria.

4. **Amendment to Bidding Documents**

   4.1 At any time prior to the deadline for submission of bids, ICAR-DCR, Puttur may, for any reason, whether on its own initiative or in response to the clarification request by a prospective bidder, modify the bid document.

   4.2 The amendments to the tender documents, if any, will be notified by release of Corrigendum Notice in print media / website. The amendments/ modifications will be binding on the bidders.

   4.3 ICAR-DCR, Puttur at its discretion may extend the deadline for the submission of bids if it thinks necessary to do so or if the bid document undergoes changes during the bidding period.
5. **Earnest Money Deposit (EMD)**

- The Earnest Money Deposit (EMD)/ EMD Exemption Certificate must be submitted prior to the DUE DATE of submission of the online bid of amount show in tender notice/schedule should be remitted as EMD in the form of Demand Draft in favour of ICAR Unit DCR, Puttur payable at PUTTUR.

- The bid submitted without EMD /EMD Exemption Certificate shall stand rejected. No interest shall be payable on EMD.

- The EMD will be returned to the bidder(s) whose offer is not accepted, within 30 days from the date of opening of Technical bid(s). In case of the bidder whose offer is accepted, the EMD will be returned on submission of Performance Security. However if the return of EMD is delayed for any reason, no interest/ penalty shall be payable to the bidder.

- The successful bidder, on award of contract / order, must send the contract/ order acceptance in writing, within 7 days of award of contract/ order, failing which the EMD will be forfeited and the order will be cancelled.

6. **Submission of Bids- Online PDF format only.**

Tender should be duly filled in (on the assigned space), duly signed with the digital signature and submitted online. All mandatory fields marked (*) have to be filled by the tenderers.

7. **Deadline for Submission of Bids – Online Only.**

7.1 Bids must be received by ICAR-DCR, Puttur before the due date and time at the address specified in the tender document.

7.2 ICAR-DCR, Puttur may extend this deadline for submission of bids by amending the bid documents and the same shall be suitably notified in the media.

8. **Late Bids**

ICAR-DCR, Puttur shall not be responsible and liable for the delay in receiving the bid for whatsoever reason.

9. **Bid Opening & Evaluation of Bids:**

9.1 The Electronic tender will be opened only after stipulated closing date and time of tender as shown in the website. The technical bids will be evaluated in two steps. The bids will be examined based on eligibility criteria stipulated at Annexure - II to shortlist the eligible bidders.

9.2 The technical bids of only the short listed eligible bidders shall be evaluated based on technical specifications stipulated at Annexure – IV.

9.3 The bidders whose technical bid is found to meet both the requirements as specified above will qualify for opening of the Technical bid and will be informed about the date and time of the opening of the Technical bid.

9.4 The duly constituted Tender Evaluation Committee (TEC) shall evaluate the bids.
10. **Comparison of Bids**

10.1 Only the short-listed bids from the bid evaluation shall be considered for commercial comparison.

10.2 The Technical bids will be evaluated on the basis of prices quoted. The contract will be awarded to lowest evaluated bidder.

11. **Award of Contract**

11.1 ICAR-DCR, Puttur shall award the contract to the eligible bidder whose technical bid has been accepted and determined as the lowest evaluated commercial bid based on the Grand Total calculated of all items etc. of the Commercial Bids.

11.2 If more than one bidder happens to quote the same lowest price, ICAR-DCR, Puttur reserves the right to decide the criteria and further process for awarding the contract, decision of ICAR-DCR, Puttur shall be final for awarding the contract.

**वित्तशास्त्रीय और शर्तें General Terms & Conditions:**

1. Before quoting for the tender, it is requested to kindly go through the tender document thoroughly and abide by all the terms and conditions given.

2. Before quoting the rates, the tenders/bidders in their own interest are instructed to visit the site for understanding the work conditions, nature of work involved, etc.

3. Quotations received after due date and time shall not be entertained.

4. The quoted rates must be valid for 90 days.

5. Rates quoted must be given in the prescribed format in BOQ only including Tax/GST.

6. The agency should furnish an Earnest Money deposit of amount shown in tender notice/tender schedule along with bid in the form of Account Payee Demand Draft from any of the Commercial banks in favour of “ICAR Unit DCR, Puttur” payable at State Bank of India, Puttur Branch. Name of the Tenderer and Tender reference number has to be written behind the EMD DD/Bankers cheque. The Scanned copy of EMD by way of Demand Draft/Bankers Cheque in PDF format should be attached in Cover-I of the E-tender. The offer without EMD/EMD Exemption certificate will be rejected. The EMD will be returned to the unsuccessful bidders after the orders are placed with the successful bidder. The EMD will be forfeited if the bidder fails to accept the order based on his/her bid or fail to carry out the work. The quotation must be for the whole work and not in fragments. The EMD or EMD/Tender Fee Exemption Certificate etc. must be submitted in person or through post/courier so as to reach on or before the due date and time.

7. **Contractors must quote rate for each item of work.** While entering if any of the cells is found to be left blank, the same shall be treated as '0'.(Zero) Therefore if any cell is left blank and no rate is quoted by the contractor the rate of such items shall be treated as '0'(zero) and the item of work shall be done free of cost.

8. The Institute will not supply any tools, equipment, materials. The Contractors has to make their own arrangement.
9. Works are to be executed strictly as per the specification mentioned in the tender document, failing which, payment will not be made.

10. Income Tax will be deducted at source from the bill as per prevailing rules. Further GST and other tax will be paid directly to the concerned department by the contractor as per rule and same show in final bill. Further after remittance copy of the same should be furnished at this Office. As per the orders of Government of India (Ministry of Finance), 2% of TDS under GST will be deducted from the bill.

11. The rates quoted in the Financial bid shall be treated as final rates and no escalation of rates shall be entertained.

12. The payment shall be released only after the final bill is submitted by the contractor after Physical completion of work and as per the actual measurements at Site. No part Payment supplementary/enhanced/revised shall be considered in any circumstances.

13. **10% the total amount quoted shall be deposited with the Institute by means of DD as Performance security** within 7th day of the award of the work. This amount shall be refundable without any interest after completion of all contractual obligations and guidelines as per GFR.

14. The **defect liability period** is six months after completion of the Work. Any defect arising in the defect liability period is to be rectified by the Contractor without any extra cost.

15. The agency has to abide by rules and regulations pertaining to labour act. The Contractor has to take all necessary steps for the welfare measures of labour employed at Site.

16. The agency is fully responsible for providing medical facilities to their labourers in case of any accident etc. Matters related to labour welfare/problems should be dealt by the contractor only. DCR, Puttur shall not be responsible in such matters.

17. Legal jurisdiction for all disputes shall be within the purview of the Puttur Courts.

18. The work has to be completed in 45 Days from the date of receipt of work order.

19. Penalty clause to be imposed at 0.25% per month subject to maximum of 2.5% of the total cost of works if work not completed within the schedule time or mutually extended time.

20. No labour of the contractor will be allowed to stay within the campus/site of the work.

21. Please note in case of closing/opening day of the tender happen to non-working day due to bandh/strike/holiday etc., the tender will be opened on the following working day.

22. The decision of the Competent Authority shall be final to select the competent firms/contractors.

23. Conditional bid will be treated as non-responsive bids and will be rejected without consideration.
The Director, DCR, Puttur reserves the right to accept or reject any tender/all tenders without specifying any reason whatsoever. No correspondence shall be entertained in this regard. The decision of the Director shall be final and binding on all concerned in such matters.

I/We hereby tender for the execution of the works referred in the aforesaid document upon the terms and Conditions contained in referred to therein and in accordance in all respects with the specification, design and other relevant details at the rate contained in schedule of items of works

I agree to undertake and execute the works as per the terms and conditions

(END OF Annexure II)
To:

The Director
ICAR- Directorate of Cashew Research
Puttur 574 202, DK
Karnataka

Dear Sir,

1. I / We have downloaded / obtained the tender document(s) for the above mentioned ‘Tender/Work’ from the web site(s) namely: https://cashew.icar.gov.in / www.eprocure.gov.in, etc.; as per your NIT / advertisement, given in the above-mentioned website(s).

2. The corrigendum(s) issued from time to time by your department / organization too has also been taken into consideration, while submitting this acceptance letter.

3. I / We hereby unconditionally accept the tender conditions of above mentioned tender document(S) / corrigendum(s) in its totality / entirety.

4. I / We do hereby declare that our Firm has not been blacklisted / debarred by any Govt. Department/Public sector undertaking.

5. I / We certify that all information furnished by the our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/ organization shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the fully said earnest money deposit absolutely.

Yours Faithfully,

Authorized Signatory.

(Signature of the Bidder, with Official Seal)

Email id for correspondence
ANNEXURE IV:
PARTICULARS OF QUOTING AGENCY

1. Name of the Agency: 
2. Full address with Phone No., E-mail etc: 
3. Name of the Proprietor: 
4. PAN No. /Circle/ Ward: 
5. Earnest money deposited with No. dated: 
6. Details of work experience in Central/State/ Govt. establishments/ Autonomous bodies/ Corporation (enclose copy) 
7. Name, A/c. No, IFSC code and full address of your Bank: 
8. Name of the permanent Representative to be visiting ICAR- DCR, Puttur regarding the contract. 
9. Any other information required: 

Date: 
Place: 

AUTHORISED SIGNATORY

Please add supplementary pages to be numbered wherever needed by the Tenderer
## Annexure V

### TENDER SCHEDULE

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Description of Work</th>
<th>Unit</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><strong>Software development for water management and leaf analysis based nutrient management in cashew and offline versions of the mobile apps.</strong>&lt;br&gt;1. Programming and development of software for water management including drip/fertigation calculator, preparing the necessary web pages and integrating with the website <a href="http://www.cashew.icar.gov.in">www.cashew.icar.gov.in</a>, in English and Kannada.&lt;br&gt;2. Programming and development of leaf analysis based nutrient management software in cashew, preparing the necessary web pages and integrating with the website <a href="http://www.cashew.icar.gov.in">www.cashew.icar.gov.in</a>, in English and Kannada.&lt;br&gt;3 &amp; 4. Development of Two offline android mobile apps using the softwares and information developed for water management (Sl. No. 1) and leaf analysis based nutrient management (Sl. No. 2) in cashew (English and Kannada).&lt;br&gt;5. Developing offline functionality for the mobile App on cashew nutrient manager in English and Kannada (the developer files of online version shall be provided).&lt;br&gt;One year warranty and 2 years AMC support after warranty period.&lt;br&gt;The softwares and mobile app should have cross compatibility across all the platform. (Rate quoted should be inclusive of all charges including taxes and other charges for all the components mentioned above).</td>
<td>Each Complete Work</td>
<td>1 No. (Complete Work with 5 components)</td>
</tr>
</tbody>
</table>
Software development for water management and leaf analysis based nutrient management in cashew and offline versions of mobile apps

1. Programming and development of software for water management including drip/fertigation calculator, preparing the necessary web pages and integrating with the website www.cashew.icar.gov.in, in English and Kannada.

<table>
<thead>
<tr>
<th>Drip irrigation/Fertigation calculator</th>
<th>DCR-Cashew Drip/Fertigation Calculator</th>
</tr>
</thead>
<tbody>
<tr>
<td>User tips</td>
<td>About the software</td>
</tr>
<tr>
<td>Other resources</td>
<td></td>
</tr>
<tr>
<td>• Water management in cashew</td>
<td><strong>The DCR- Cashew Drip/Fertigation Calculator software</strong></td>
</tr>
<tr>
<td>• CPE details</td>
<td><strong>has been developed by ICAR-Directorate of Cashew Research, Puttur with funding support of RKVY-RAFTAAR, Government of Karnataka and is designed to aid the growers to find out the water to be supplied through drip irrigation and to calculate the fertilizer to be used while fertigation.</strong></td>
</tr>
<tr>
<td>• Photographs</td>
<td></td>
</tr>
<tr>
<td>• Videos</td>
<td></td>
</tr>
<tr>
<td><strong>Features and copy rights</strong></td>
<td><strong>First developed and released on ……………………</strong></td>
</tr>
<tr>
<td><strong>Disclaimer</strong></td>
<td><strong>© ICAR-Directorate of Cashew Research, Puttur, Karnataka. All rights reserved. Developed by:</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Kannada translation:</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Designed by:</strong></td>
</tr>
<tr>
<td></td>
<td>..</td>
</tr>
<tr>
<td><strong>Crop</strong></td>
<td>o Cashew</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td><strong>Month of irrigation</strong></td>
<td>Drop down menu to be provided for different months to choose from</td>
</tr>
<tr>
<td><strong>Daily average CPE</strong></td>
<td>Drop down menu with values 1, 1.5, 2. …… Upto 10 and option to enter own value</td>
</tr>
<tr>
<td><strong>How much of CPE to be irrigated (%)</strong></td>
<td>Drop down menu with values 10 to 100</td>
</tr>
<tr>
<td><strong>Canopy spread N-S (m)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Canopy spread E-W (m)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Water requirement (litres/tree/day)</strong></td>
<td></td>
</tr>
</tbody>
</table>

There should be a short descriptor near to both these against symbol \(^\wedge\) which on clicking provide a brief description.

This column is automatically calculated, equation connecting previous columns shall be provided in excel sheet.
<table>
<thead>
<tr>
<th>Emitter flow rate (litres/hour)</th>
<th>Drop down menu and also manual entry option</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of emitters</td>
<td>Drop down menu and also manual entry option</td>
</tr>
<tr>
<td>Hours of irrigation per day</td>
<td></td>
</tr>
</tbody>
</table>

These columns are automatically calculated, equation connecting previous columns shall be provided in excel sheet.

| Type of plantation | *Normal density  
*High density  
* High density with known fertilizer recommendation |
|--------------------|--------------------------------------------------|

Normal density:

| Crop details | o No. of trees /ha  
o Spacing  
row to row  Plant to plant  Total area  area m²  (to auto calculate) |
|--------------|--------------------------------------------------|

Age of the tree

If your crop is less than 5 years age, enter the value; If 5 or more, just enter 5 (This column should not take values more than 5)
# High density

<table>
<thead>
<tr>
<th>No. of trees /ha</th>
<th>Spacing</th>
<th>Area row to row</th>
<th>Area Plant to plant</th>
<th>Total Area m² (to auto calculate)</th>
</tr>
</thead>
</table>

## Age of the tree

*If your crop is less than 3 years age, enter the value; If 3 or more, just enter 3 (This column should not take values more than 3)*

## Do you have a specific fertiliser recommendation for HDP: Yes/No

*If yes, separate column to enter the fertiliser dose to be given and that should be used for calculation*

## Recommended fertilizer dose (g/tree/year)

<table>
<thead>
<tr>
<th>Region</th>
<th>N</th>
<th>P₂O₅</th>
<th>K₂O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karnataka</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kerala</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Drop down menu and column for manual feeding*
<table>
<thead>
<tr>
<th>Do you wish to apply full dose or a fraction of the recommended dose (%)</th>
<th>10, 20 … 100</th>
</tr>
</thead>
</table>
| Whether soil testing done and reports available | o Yes  
o No |

<table>
<thead>
<tr>
<th>If yes</th>
<th>Rating value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>4.5  Acidic</td>
</tr>
<tr>
<td>Electrical conductivity (dS/m)</td>
<td>0.05  Normal</td>
</tr>
<tr>
<td>Organic carbon (%)</td>
<td>2  High 0.75</td>
</tr>
<tr>
<td>Nitrogen (kg/ha)</td>
<td>290  Medium 1</td>
</tr>
<tr>
<td>Phosphorus P2O5 (kg/ha)</td>
<td>20  Medium 1</td>
</tr>
<tr>
<td>Potassium K2O(kg/ha)</td>
<td>150  Medium 1</td>
</tr>
</tbody>
</table>
Choose fertilizer to be used

- **Mixture / fertilizer combination**

<table>
<thead>
<tr>
<th>N</th>
<th>P2O5</th>
<th>K2O</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-20-0-15</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

*What N fertilizer you wish to include*
*What K fertilizer you wish to include*

- **Individual fertilizer**

  * Nitrogen fertilizer
  * Phosphorus fertilizer
  * Potassic fertilizer

Note: The name of fertilizer selected from drop down menu should appear in the result/report.

On selecting the required fields the fertilizer dose is to be calculated for each fertilizer per tree wise and area wise, for which formula will be provided in excel sheet. User may choose either individual fertilizer or mixture.

<table>
<thead>
<tr>
<th>How much of the dose is to be applied as soil application</th>
<th>Drop down menu for 25, 50, 75 and 100 and other manual entry</th>
</tr>
</thead>
</table>

Drop down menu and manual entry column for each type

Drop down menu

Drop down menu with MOP default

Drop down menu and manual entry column for each type
Then the software should calculate different doses of fertiliser for soil and for fertigation (The fertiliser name should be as chosen by user)

<table>
<thead>
<tr>
<th></th>
<th>Soil application rate</th>
<th>Top be applied through drip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOP</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How many fertigation doses are planned [Drop down menu]

Capacity of fertiliser mixing tank:
Amount of fertiliser per each fertigation [to be dissolved in 100 litre water]

<table>
<thead>
<tr>
<th>Fertiliser name as per the one chosen by the user</th>
<th>kg</th>
<th>ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phosphoric acid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOP</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Amount of stock solution to be released per every 1000 litre of irrigation water through drip
The indicative list of information to appear in final report is as follows.

<table>
<thead>
<tr>
<th>Report</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name of the farmer</strong></td>
</tr>
<tr>
<td><strong>Planting details</strong> Normal/ High density / High density with fertiliser package</td>
</tr>
<tr>
<td><strong>No. of trees in the plantation</strong></td>
</tr>
<tr>
<td><strong>Soil test status adjusted</strong> Yes/No</td>
</tr>
<tr>
<td><strong>Month of irrigation</strong></td>
</tr>
<tr>
<td><strong>Water requirement (L/tree/day)</strong></td>
</tr>
<tr>
<td><strong>Hours of irrigation per day</strong> In Minutes</td>
</tr>
<tr>
<td><strong>Amount of fertiliser to dissolve in 100 litre water to make stock solution</strong></td>
</tr>
<tr>
<td><em>(names of selected fertiliser used in calculation should appear here)</em></td>
</tr>
<tr>
<td>kg/100 litre water</td>
</tr>
<tr>
<td>Urea</td>
</tr>
<tr>
<td>Phosphoric acid</td>
</tr>
<tr>
<td>MOP</td>
</tr>
<tr>
<td><strong>Amount of stock solution to release per every 1000 litre of water</strong></td>
</tr>
</tbody>
</table>

When the user select high density planting or High density with known fertilizer recommendation, the formula changes at some places which will be included in the excel sheet to be provided to the successful bidder. For a model of related work on soil nutrient management the bidder may refer to [https://cashew.icar.gov.in/soil](https://cashew.icar.gov.in/soil)

2. Programming and development of leaf analysis based nutrient management software in cashew, preparing the necessary web pages and integrating with the website [www.cashew.icar.gov.in](http://www.cashew.icar.gov.in) in **English and Kannada**.
Leaf sampling guidelines (a write up to include)

Leaf analysis

Leaf nutrient assessment

<table>
<thead>
<tr>
<th>Features and copy rights</th>
</tr>
</thead>
<tbody>
<tr>
<td>First developed and released on .....................................</td>
</tr>
<tr>
<td>© ICAR-Directorate of Cashew Research, Puttur, Karnataka. All rights reserved.</td>
</tr>
<tr>
<td>Developed by:</td>
</tr>
<tr>
<td>Kannada translation:</td>
</tr>
<tr>
<td>Designed by:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name, Location, mobile no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crop o Cashew</td>
</tr>
</tbody>
</table>

Please enter the leaf nutrient analysis data

<table>
<thead>
<tr>
<th>N (%)</th>
<th>User has to enter the values here</th>
</tr>
</thead>
<tbody>
<tr>
<td>P (%)</td>
<td></td>
</tr>
<tr>
<td>K (%)</td>
<td></td>
</tr>
<tr>
<td>Ca (%)</td>
<td></td>
</tr>
<tr>
<td>Mg (%)</td>
<td></td>
</tr>
<tr>
<td>S (%)</td>
<td></td>
</tr>
<tr>
<td>Fe (ppm)</td>
<td></td>
</tr>
<tr>
<td>Mn (ppm)</td>
<td></td>
</tr>
<tr>
<td>Zn (ppm)</td>
<td></td>
</tr>
<tr>
<td>Cu (ppm)</td>
<td></td>
</tr>
</tbody>
</table>

Based on the input the data will be classified into 5 classes and recommendation will be given. Equation in excel sheet shall be provided.
3. Development of offline android mobile apps (2 Nos) using the softwares and information developed for water management (sl. No. 1) and leaf analysis based nutrient management (sl. no. 2) in cashew (English and Kannada).

Using the two software developed (Sl. No. 1 and 2), two separate Android mobile App shall be developed with offline and bilingual functionality. It shall have all the functions available in the developed softwares, and for the details regarding Splash screen, Login, dash board, side bar, lower side bar, flow etc, please consult the model given at Sl. No. 4.

Although offline, there shall be option to request / update automatically when the user is connected to internet once in every 3 months. And automatically send the statistics on usage to the admin. The designs given are for giving the firms general idea of work requirement only. All efforts shall be made to make the softwares and App as user friendly as possible and also attractive.

4. Developing offline functionality for the mobile App Cashew Nutrient Manager
Please visit the links below or search for “DCR-Cashew Nutrient Manager” in Google playstore to see the already developed online version. The offline version is required to be made for this, for which developer files shall be provided. Minor modifications to the developed version may also need to be done, if so deemed.


https://cashew.icar.gov.in/soil/

Screen 1: Splash Screen

This screen will be the opening screen when a user will enter in the application showing the logos of DCR and the name of the app (and other, if any).

Screen 2: Login/Registration

This screen will have two options: Login and registration feature to enter in the application. The registration would be both -> through email and/or social log-in (Facebook, Google). All the registered users data can be managed through the backend and upon each user registration, admin would be notified (though email). Designed in such a way as to enable the mobile OTP based login. But at present that package not to be included.

  Till this step, the user will require internet connectivity.

Screen 3: Dashboard/Home Page

After successfully logging in, the user will be redirected to the home page. Where the user will see the “About Us” (About DCR) where useful links and useful data about DCR can be shown.

Screen 4: Side bar Menu

This menu can be seen on once a user drags the screen from the side to the center of the home page. This side menu will contain options like:
  - Change language
  - Home
  - Contact Us
- Acknowledgement
- Share the app
- Other Resources
- Log out

It will be common side bar, which will be visible throughout the application wherever the user is in the mobile application.

**Screen 5: Lower Menu bar**
This section will be on the footer of the application, common for the entire screen so that the user can jump to one module to another.
It will contain all the calculators:

- Fertilizer calculator
- Lime calculator
- Foliar Nutrition calculator
- Download soil health card *(it may require internet connection)*
- Useful Converters
- Other resources
  - Nutrient management in cashew
  - Deficiency symptoms

Two language option should be there as it is available at present for the online version.
FLOW OF THE APP

<table>
<thead>
<tr>
<th>Home page</th>
<th>Log-in page</th>
<th>Side bar</th>
<th>Lower bar</th>
</tr>
</thead>
</table>

The design is indicative only.

There shall be option to request / update automatically when the user is connected to internet once in every 3 months. And automatically send the statistics on usage to the admin.
Other terms and conditions

1. Statistics of usage
Wherever possible the facility should be made available to gather usage statistics in softwares.

2. Deliverables
- Selected firm is expected to complete the work within 30 days of receiving the work order.
- Selected firm has to share the design documents with ICAR-DCR, Puttur for review and sign off.
- The firm has to submit the user manual (pdf and video), admin manual, test plan and test results.
- The firm has to submit the application code, web APIs and deployment document in hard disk.
- Technical documentation of design and development, complete source code and training to admin need to be provided.

3. Designs
- Application should be built in such way that it is easy to use and navigate and attractive.
- All the designs have to be provided to ICAR-DCR.
- All the excel sheets containing formula, write ups, document and images/videos will be provided by ICAR-DCR, Puttur
- Creative ideas and design will be copy right of ICAR-DCR, Puttur.

4. Hosting
- The softwares and mobile app has to be hosted in www.cashew.icar.gov.in., which is hosted at and managed by ICAR-Indian Agricultural Statistical Research Institute, New Delhi. Access rights shall be arranged once the software and Apps are ready.

5. Intellectual Property Rights
- The intellectual property rights of the softwares and mobile apps developed and copy rights the design and content of the softwares and mobile Apps shall rest with ICAR-DCR, Puttur. The selected firm shall provide the source code at the time of sign-off.
• The developed softwares and mobile app will be the property of ICAR-DCR, Puttur and the firm shall not lease, sale, share the source code of the softwares to any other entity.

6. Training
For the effective use of the application and its associated licenses etc, the selected firm shall compulsorily provide training for ICAR-DCR, Puttur team at ICAR-DCR, Puttur.

7. Operation and support
Successful bidder shall provide one year warranty for the softwares and the mobile Apps and two year AMC support and maintain the software and mobile Apps from the date it go live.

8. Change management, upgrades and updates
Successful bidder shall be responsible to carryout changes in software at no additional cost to ICAR-DCR for any changes required for functions, improvements or any configuration changes etc as per the requirements of ICAR-DCR, Puttur during the one year warranty period. Additional proposals may be submitted by the agency in future for upgradation of the software for additional language capabilities.

9. Mobile Apps Offline with occasional update
The mobile app will be openly accessible and work offline once installed, but with ability to track usage once the user is online. The user needs to complete the registration process. The registration for the mobile app will be displayed only for the first time login of a user.

10. Mobile App
Robust and user friendly content management system should be provided with the following features.

• Admin user to be able to create, publish / unpublish and delete all the content.
• Admin user should be able to sort and search data.
• Administrator should be able to edit and update the menu titles and all the contents of the app.
• The settings page should have options such as Change language, About us, Features and copy rights, Other useful resources, Share the app, Report bug, change text size, Uninstall the app (with reason for uninstall), Rate the app.
• There should provision to add many more languages in future.
• Any additional features to make the app more user friendly and attractive will be part of the work.

11. **Mobile app support login:** A login must be provided to support the admin, for viewing the following:

- Number of active installs
- Total downloads
- Total feedback received
- Total Uninstall
- Support to enter reason for uninstall
- Mobile app crash report
- Notification management
- Administrator must be able to manage push notification to be sent to the active users. The administrator also must be able to plan and prepare auto sending of notification on timely basis

12. The designs given in the tender document for different components are for giving the firms general idea of the work requirement only. Bidders are also requested to visit [https://cashew.icar.gov.in/soil/](https://cashew.icar.gov.in/soil/). All efforts shall be made to make the softwares and Apps as user friendly as possible and also attractive.