

HARVEST *it*[™]
(Integrated Plantation Management Software)

Floriculture Operations

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TABLE OF CONTENTS

INTRODUCTION	3
Production System	4
Post Harvest Management System	11
Financial Accounting System	14
Bills Management System	15
Inventory Management System.....	17
Fleet Management & Workshop System.....	19
Employees Payroll System	21
IMPLEMENTATION & TRAINING	24
Hardware Requirements	25
CLIENT LIST	26

INTRODUCTION

HARVEST *it*[™] – Floriculture consists of the following suite of integrated modules that effectively covers all the business processes of procuring and raising cuttings in the nursery, care and maintenance in the green house, harvest and post harvest procedures, stringent monitoring of quality control measures, the cold chain, sales and dispatch, production planning, along with its important supporting modules such as financials, inventory management, etc with an efficient management information system.

1. Production System
2. Post Harvest Management System
3. Financial Systems
4. Inventory and Purchase Systems
5. Fleet Management & Workshop System
6. Employees Payroll System
7. Management Information System

HARVEST *it* has the option to locate relevant modules across 2 or 3 levels depending on the Company administrative structure and requirements. After integration and consolidation at each level, relevant information is data transferred to the next reporting level.

Production System

The **Production System** deals with the production details of different flowers grown in each production unit. It specifies the various cuttings, fertilizers, equipments, growth stage, and different chemicals used for the production units. The system keeps track of factors such as propagation details, issue requisitions, public and employee health, storage, etc. The factors that deal with the maintenance of environment balance such as water recycling, chemical container disposal, etc are tracked through the system. Management reports that reflect the various business processes as described are self-generated.

Salient Features

1. Rooting House – Arrival for propagation

The Crop Arrival option is used to enter the details of crop that has arrived for propagation. The variety and quantity are specified in this option. The Arrivals can be either from within the production units, breeder or out sourced. The destination for which they are being propagated can be the farm, production units or third parties. The arrival location and the destination details can be entered using this option. The due date of planting can also be entered.

2. Propagation – Grafting

The Grafting option is used to enter details regarding the grafting of the rose. Grafting is done by plugging the wild rose with a bud using a peg. The details such as quantity of scion arrived for grafting, balance, root stock and the color of the peg used are entered through this option.

3. Propagation – Planting

The Planting option is used to enter the details of the plant corresponding to the specified class and variety that has to be planted for propagation in the beds. It keeps a specified count for each bed. The bed and the count of plants that has to be planted are entered through this option.

4. Rooting House – Rooting

The Rooting option is used to enter the details regarding the crops that have to be planted. Details of the crops such as the variety and type of the crop, the production units in which the rooting is to be done, bed and count of the rooting material is entered through this option.

5. Rooting House – Stage Transition

The Stage Transition option is used to enter the details of the crop that has been uprooted from one stage to another within a production unit.

6. Discards

The Discard option is used to enter the details of the specified class of crop that has been discarded either from the storage unit or directly from the beds owing to the various damages corresponding to the production units. Damages can either be due to disease or being in storage for a long time. The crops that have wilted are also discarded and referred to as ‘death’ of the crop. Details of the storage from where the crops are discarded are entered through this option. The variety, quantity, period and the number of boxes being discarded are entered through this option. Details such as the bed and count of the plants damaged, the specific batch and variety are entered through this option.

7. Rooting House – Order for Cutting

The Order for Cutting option is used to enter the details of the orders raised by clients for rooted cuttings of the specified class. Details of orders such as week of sticking, week of lifting, week of delivery, etc corresponding to the specified week are entered through this option.

8. Rooting House – Issue Requisition

The Issue Requisition option is used to enter the details of requisitions raised from a location or a client for a variety of the crop. Details such as the type of order raised and whether the order has been from the location or a client is entered through this option. Other details such as the variety and count of the crops for which this order has been raised can also be entered through this option.

9. Rooting House – Dispatch

The Dispatch option is used to enter the details of the variety of crops dispatched to the farm or to the client, corresponding to the specified requisition order number.

10. Production – Planting

The Planting option is used to enter the details of the crop to be planted in the specified production unit. The number of plants belonging to the specified class and variety that can be planted in different sections of the specified production unit, can be entered through this option.

11. Production – Crop Maintenance / Husbandry

The Crop Maintenance / Husbandry option is used to enter the details of the maintenance of specified variety of crops in the production units. Maintenance such as budding, de-budding are done for the growth of healthy plants. The bed and the number of plants for which the maintenance is done are entered through this option.

12. Technical – Analysis

The Analysis option is used to enter the details of the analysis of the planting media being used for the crops.

13. Technical – Land Preparation

The Land Preparation option is used to enter the details of activities in the preparation of land for the production units.

14. Technical – Bed Preparation

The Bed Preparation option is used to enter the details of pH, sterilization temperature, activities and material quantities used in the preparation of the bed for the production unit.

15. Technical – Scouting

The Scouting option is used to enter the details of the diseases noticed during scouting and reported by an employee for a particular section of the production unit. Bed no., variety, plant location, severity rating, etc are recorded here.

16. Technical – Calibration / Spray Nozzle

The Spray Nozzle option is used to enter the details of the calibration for the spray nozzle such as the lance no., nozzle no., spray pressure, standard and actual flow rates with variance.

17. Technical – Calibration / Drip Line

The Drip Line option is used to enter the details of the calibration of the drip line. For each production unit, the drip line pressure before and after filtration and also at three places along the drip line, no. of emitters, flow meter readings, volume of water with start and end timings, are recorded.

18. Technical – Daily Spraying Record

The Daily Spraying option is used to enter the details of the daily spraying of the chemicals in a production unit. Also recorded are the pests and diseases identified, chemical and quantity sprayed, spray volume with date and time of spray.

19. Technical – Chemical Exposure

The Chemical Exposure option is used to enter the details of the employees who are exposed to chemicals during the spraying operation. The location of spraying and the duration.

20. Technical – Compost

The Compost option is used to enter the details of the compost of the specified crop. The crop weight, crushing weight and final weight of the compost are recorded here.

21. Technical – Public Health

The Public health option is used to enter the details of fertilizers and agro chemicals being applied in a specified village out of concern for the health of the inhabitants. Individual house nos. and remarks on health are recorded.

22. Technical – Water Treatment

This option is used to enter the details of the treatment of water. The water that is used in the production units is treated in accordance with the water treatment plan after which it is let out into the river. Details such as the chemicals used, flow and quantity, etc. are recorded.

23. Technical – Water Testing

This option is used to enter the details of the water being tested in a specified village. It will record the tank no. and quantity of chlorine used.

24. Technical – Water Recycling

The facility provided here records the analytical parameters such as EC, pH, etc of the water to be recycled, details of feeding solution, irrigation volume and drainage, mother solution, duration of treatment and final analytical parameters.

25. Technical – Daily Water Consumption

This facility records the consumption of water on a daily basis at a specified location.

26. Technical - Weather

The Weather option is used to enter the weather details of the logged-in location. The weather details include information about rainfall, temperature, humidity, sunshine etc. of the location.

27. Technical – Blood Sampling Schedule

In keeping with the high concern of those spraying workers who are exposed to pesticides, the blood sampling schedule option is provided to schedule the exposure days of each employee when he is engaged in spraying operations.

28. Technical – Blood Sampling

The Blood Sampling option is used to enter the details of the level of Cholinesterase detected for each employee after blood sampling and comparison against base levels.

29. Technical – Fertilizer Sampling

The Fertilizer Sampling option is used to enter the sampling details of the specified fertilizer. The sampling details include the supplier's name, batch no., nutrient content of the fertilizer, batch no., quantity, texture, etc.

30. Technical – Pest and Spray Planner

The Pest and Spray Planner option facilitates the entry of weekly details of the chemicals that are to be used against each pest & disease during the year.

31. Technical – Fertigation – Fertilizer Application Record

The Fertilizer Application Record option is used to enter the details of the fertilizers applied in a production unit, the quantity used, pH and EC analysis, tension meter reading and quantity of water used.

32. Technical - Fertigation - Drippers

This option records the EC of the drippers used in each production unit.

33. Technical – Fertigation – Daily Water Use

This option is used to enter the details of water utilized at different production units of the specified block. It captures the details of planting media used, fertigation station, quantity of water over a feeding cycle, the duration, EC and pH.

34. Technical – Fertigation – Fertigation Program

The Fertigation Program has the option of entering the details of the production unit, volume of water from which tank, over what growth stage, concentration of major and minor elements, water analysis and fertilizer required in grams.

35. Trials

The Trials option is used to enter the details of the different varieties of crops which are meant for trial purpose. The beds in which this crop is planted, the description of the specified variety and the details regarding the variety used for the trial are entered through this option. The Trials option is also used to enter the details of the different varieties, which are used for trial.

36. Calendar

The Calendar option is used to enter the dates on which each variety of crop in the specified block and production unit should be planted and the date on which it is meant to be uprooted.

37. Wetland

The Wetland option is used to enter details of the wastewater from the production units. The details include the pond in which the wastewater is collected, quantity of water, BOD and COD levels, chemical content and its active ingredient.

38. Planning – Polythene Replacement

The Polythene Replacement option is used to enter the details of the replacement of polythene in different parts of the specified greenhouse, its date of installation, expiry and notification dates.

39. Planning - Production

The facility given here enables the user to plan weekly schedules for each variety on a yearly basis for each of his production units.

40. Bulbs/Tubers Storage

In the Bulbs/Tubers Storage option the user can enter the storage details of bulbs and tubers of the specified variety of crop. Details include the temperatures in storage, during hot water treatment and in drying, the date of lifting, the period in soil, etc.

List of Reports

1. Propagation – Planting
2. Propagation – Cuttings Production and Sales
3. Propagation – Weekly Cuttings Production
4. Propagation – Cuttings Availability
5. Propagation – Order of Rooted Cuttings
6. Propagation – Shipment Advice
7. Propagation – Stock Statement
8. Trial Results
9. Technical – Scouting Record
10. Technical – Year Planner – Disease / Pest Planner
11. Technical – Sprayer Calibration.
12. Technical – Blood Chlorinersterase Monitoring Graph
13. Technical – Blood Chlorinersterase Monitoring
14. Technical – Chemical Exposure
15. Technical – Daily Water Use
16. Technical – Fertilizer Application Record
17. Technical – Fertigation Station
18. Technical – Drippers
19. Technical – Greenhouse Spray Record
20. Planning – Polythene Replacement
21. Statutory reports

Several Checklists are also available

Post Harvest Management System

The **Post Harvest Management System** facilitates recording different processes after the harvesting of flowers. It records the details of crops arrived from own farm and out grower. The customer specifications of the crops to be delivered can be entered. Based on these such customer specified sales orders can be generated.

This system also facilitates the grading, packing, dispatching and invoicing of the crops. The quality checking details of crops can also be entered. The details of the crops discarded due to various reasons, re-grading and transfer details of crops can be recorded. The vase life sampling details, temperature details of storage units, complaints from out growers can also be specified. This system produces all the desired reports required for monitoring and controlling post harvest operations

Salient Features

1. Specification – Customer Specification
2. Specification – Temporary Specification
3. Sales Order
4. Sales ForeCast
5. Arrival – Own Farm
6. Arrival – Out Grower
7. Incoming QC
8. Grading
9. In Process QC
10. Stock Allocation
11. Confirm Allocation
12. Packing – Packing
13. Packing – Finished Product QC
14. Dispatch
15. Invoice
16. Auction Sales
17. Sanctioning
18. Discards

19. Regrading
20. Transfer
21. Vase Life - Sampling
22. Vase Life – Daily Observation
23. Hourly Temperature
24. Complaints

List of Reports

1. Check List - Grade
2. Check List – Storage Unit
3. Check List – Commodity
4. Check List – Charges
5. Customer Specification
6. Temporary Specification
7. Arrival Details - Own Farm Details
8. Arrival Details – Supplier Wise
9. Sales order
10. Production Details – Grade Wise Details
11. Production Details – Line Wise
12. Sales Allocation Details
13. Packing
14. Dispatch
15. Invoice Details
16. Auction Sales Details
17. Discards Details
18. Regrading
19. Transfer
20. Vase Life – Sampling Details
21. Vase Life – Observation Details
22. Vase Life – Vase Life Details
23. Vase Life – Vase Life Weight
24. Storage Temperature

25. Complaints Details
26. Quality Check Reports – Incoming QC – Detailed
27. Quality Check Reports – Incoming QC – Consolidated
28. Quality Check Reports – In Process Qc
29. Quality Check Reports – Finished Product QC
30. Graded Crop Details
31. Ungraded Crop Details
32. Rejection Details
33. Summary Reports - Sales Order Summary
34. Summary Reports - Sales Summary
35. Summary Reports - Arrival Summary
36. Summary Reports - Graded Summary
37. Summary Reports - Packing Summary Details
38. Summary Reports - Dispatched Summary
39. Packing Control Sheet
40. Stock Reports – Stock Summary
41. Stock Reports – Ungraded Stock
42. Stock Reports – Graded Stock
43. Stock Reports – Packed Stock
44. Graphical Reports – Arrival Details
45. Graphical Reports – Graded Details
46. Graphical Reports – Packed Details
47. Graphical Reports – Discarded Details
48. Sales Forecast

Financial Accounting System

The **Accounts** module of **HARVEST it™** takes care of every accounting need at the location. Besides regular accounting functions, the System offers features like accounts grouping in 10 levels, several documents like Petty Cash, Cash On Hand and different bankbooks. It allows for a provision for reconciliation of Bank, Debit/Credit note, Inter Location Documents. It allows a foolproof method against manipulation of accounts. Users can be defined under Sanctioning authorities with the authority to sanction predefined amounts. **HARVEST it™** Accounts supports multi- location and multi currency requirements. It also provides a Mini Budget as part of the same module.

Salient Features

- Document Maintenance
- Document Verification
- Document Sanctioning
- Document Canceling
- Bank Reconciliation
- Foreign Exchange Gain or Loss

List of Reports

- Documents – Cash Book / Bank Book / Journals
- Documents - Debit & Credit Notes
- General Ledger
- Trial Balance
- Sundry Creditor and Debtor Balance
- Cheque Printing
- Document Balance Statement
- Bank Reconciliation Statement
- Final Account Reports – Trading & P/L, Balance Sheet & Cash Flow

Bills Management System

Bills Management module of **HARVEST it™** is a system that is capable of automating all the tedious processes involved in the processing of payables and receivables. It keeps track of all the supplier invoices and related documents, creditors & debtors' balances right from their generation to the final payment or receipt. In general the bills could be broadly classified as Payables and Receivables. The System allows the flexibility for defining different Bill Categories, Ageing of Bills, General Payment Terms, supplier wise payment terms, additional charges and linking them to account heads.

Salient Features:

- Advance Receipt
- Advance Payment
- Receivables
- Payables
- Bills Sanctioning
- Adjustments
- PAN Generation
- PAN Cancel
- Receipts Payment
- Payment Cancel

List of Reports

- Advance Receipt & Payments
- Receivables & Payables
- Adjustments
- PAN Generation PAN Cancel
- Receipts Payments
- Bill Register
- Additional Charges Register
- Unsanctioned Bill Register
- Sanctioned Bill Register

- Receivables Payables
- Term Wise Payables
- Unpaid Invoices
- Unassigned Advances Reports
- Advance Adjustment Register
- PAN Report
- Payment Advice
- Outstanding (Detailed)
- Outstanding (Summary)
- Ageing Analysis (Ageing Bracket Wise)
- Ageing Analysis (Supplier Wise)
- VAT Summary
- Statement of Accounts
- Sales Ledger Control Account
- Debit Ratio Report
- Discount Summary Report

Inventory Management System

The **Stores** module of **HARVEST it™** maintains stock at the various locations. The System permits any four types of stock valuation methods viz. – Monthly and Daily Weighted Averages, FIFO and Monthly General rate. The User can define as many additional charges as needed which can be posted either to stock or account. Allowance can be maintained either item-wise or account-wise. Both Local and Head Office purchases are possible. There is a provision for Sanctioning or Rejecting Issue and Purchase requisitions. An Automatic Stores Issue Requisition (SIR) closing is possible after a predefined number of days. The System allows both Scrap Sales and Differential Rate Issue.

Debit Notes and Credit notes can be generated by the System. Stock Adjustment can be done either for Value or for Quantity. It can produce Reorder warnings either at the start or through a report. It is capable of generating all the required reports that are needed for monitoring and controlling the system. It can generate a Budget Variance report, Pending LPO and Purchase Requisition report, ABC Analysis, Ageing Analysis and SIR status among several others. This module is linked to the Central Stores module that coordinates procurement of items after validating the stock position at all estate stores.

Salient Features:

- SIR/Stores Issue
- SIR Verification
- SIR Sanctioning
- Purchase Requisition
- PR Sanctioning
- Goods Receipt Note
- Supplier Invoice
- Direct Item Issue
- Issue Return
- Purchase Return
- Stock Adjustments
- Stock Verification

List of Reports

- Stores Requisition

- Stores Issue Note
- Goods Received Note
- Class Wise Stock
- Closing Stock
- Stock Statement
- Stock Ledger
- Detailed Material Consumption
- Bin Card
- Direct Purchase
- GRN Register
- GRN without Invoice
- Direct Issue Details
- Purchase Register
- Direct Consumption
- Reorder List
- Stores Journal
- Expenditure Summary

Process & Updation

- Stock Valuation
- Accounts Posting

Fleet Management & Workshop System

The Fleet Management module of **HARVEST it™** keeps a track of the operational performance of all the vehicles at the location. It registers the requisitions for vehicle running and allocates vehicles on priority basis, thus acting as a transport service department. It records trip wise vehicle running details with starting and ending meter reading and costing head particulars. It records consumption of fuel, lubricant and spares. It calculates the running expenses in terms of man, material and money. It distributes vehicle-running expenses location wise and costing head wise based on the computation of the Cost per Unit from the Year to Date basis.

The **Workshop** module of **HARVEST it™** maintains service schedule for all assets. It generates daily schedule for service. It registers job requisitions and prepares job card. It captures work in progress, completion of job and other expenditures on job. It distributes repair cost location wise and costing head wise based on the computation of the Cost per Unit from the Year to Date basis.

Salient Features:

- Daily Log Book
- Fuel and Oil Consumption
- Job Card
- Job Card Sanctioning
- Job Allocation
- Job Completion
- Job Card Completion Sanctioning
- Service Scheduling
- Gate Pass
- Sub Store
- Process
- Distribution of Charges
- Accounts (FA) Posting

List of Reports

- Daily Log
- Fuel & Oil Consumption

- History of Asset
- Machinery Register
- Machine Wise Expenditure
- Cost Analysis
- Labor Cost
- Operational Cost
- Service Schedule
- Performance Analysis
- Section – wise To Date Job Cost
- Cost Distribution Statement
- Running Cost
- To – Date Running Cost of vehicles
- Checklist -- Job Cost
- Checklist -- Job Cost – Detail
- Checklist -- Vehicle Running Expenditure
- Checklist -- Vehicle Running Accounts
- Checklist -- Monthly Comparison of Vehicles
- Checklist -- Existing Vehicle Utilization
- Checklist -- Vehicle Comparison Statement

Employees Payroll System

The **Payroll** module of **HARVEST it™** is multifunctional. The System looks after the salaries and wages of the Upper Tier and Lower Tier employees at the Estate Level. It also contains the details of various activities in the nursery, green house, etc. to determine productivity and production. It captures location wise data so that individual performance can be monitored. Besides handling Attendance, the Payroll System tracks and monitors all statutory and fringe benefits and other incentives. It generates pay slips as well as a plethora of productivity and statutory reports. It also keeps track of the employees' personal details and history.

Salient Features:

- Attendance
- Harvest Entry
- Overtime
- Leave
- Differential /Acting Allowance Earning
- Issue
- Loan
- Recovery

List of Reports

- Pay Slip
- Single line Pay slip
- Payment Voucher
- Denomination
- Gratuity List
- Bank Payment Advice
- Exceptional Pay Statement
- Pay Summary
- Job Expense Statement
- Journal Voucher
- Recovery Statement

- Over-time
- Holiday Wages
- Cash Advance
- Annual Leave Register
- Loan Details
- Arrears Pay slip
- Arrear Pay – Denomination
- Arrears – Arrears P.A.Y.E Report

Analytical Reports

- Harvest Register
- Harvest Analysis
- Job Order Analysis
- Daily Job Expense Statement
- Productivity Profile

Attendance Records

- Check Roll Book
- Daily Attendance List
- Attendance Details
- Attendance Summary
- Attendance Summary – Job wise
- Attendance Record – Lent Labor Check List
- Lent Labor Overtime Check list
- Multi Attendance List
- Labor Distribution Reports
- NIL Attendance List
- Absenteeism (Based on Leave marked)

Statutory Reports

- EPPF Returns
- EPPF Schedule of Contribution Earnings

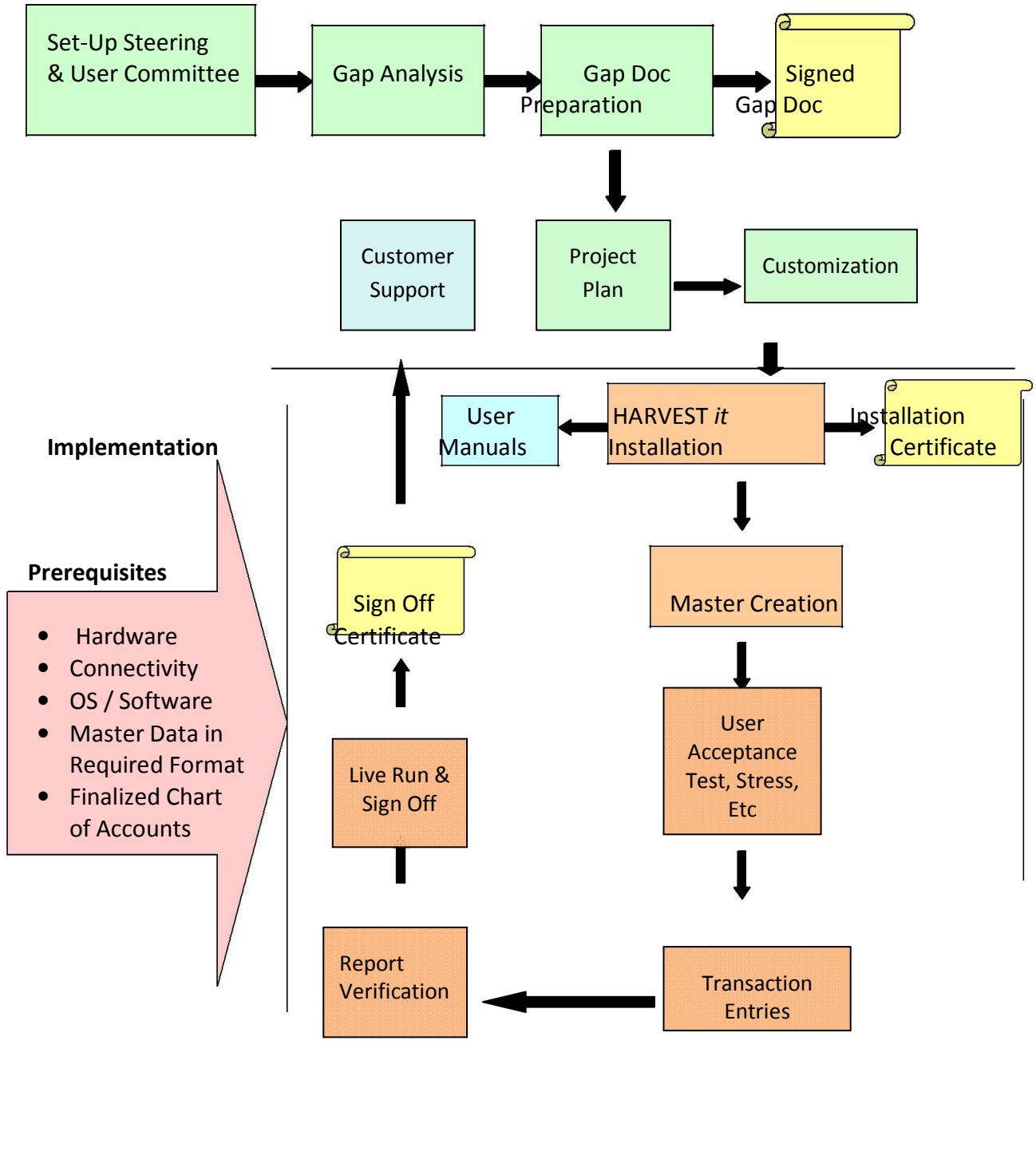
Process

- Calculation
- Arrears Calculation

Updation

Accounts Updation

IMPLEMENTATION & TRAINING



The implementation Team consists of a Project Manager and a Team Leader who will be in charge of the project. After implementing **HARVEST it™** at the customer site we conduct customer or user training. We monitor the user data for a specific period. As per the Gap Report, we execute the application and generate the reports or the output. After that we verify the reports with the customers and rework on the customer feedback. Again we execute the application and generate the reports and verify the output and the results with customer. We will sign off from the customer site only after the verification of all **HARVEST it™** reports.

Hardware Requirements

# Item		Specifications
1	Server	Intel Xeon, RAM 2GB, 512K Cache, CDROM, Ethernet, 3.5" Floppy Disk Drive, 2 hard disks 18.2 GB Ultra Wide SCSI2,
2	Client	P IV 2.8 GHz, 512K Cache, 128 MB RAM, HD 6.4 GB, CDROM 50x, Ethernet 10/100, 3.5" Floppy Disk Drive
3	UPS	Suitable for above
4	Printer	132 column, 24 pin heavy duty DM printer
5	Backup	DAT40 HP Sure Store / Cartridge 40GB DDS4

CLIENT LIST

- **James Finlay Group of Companies, UK**
 - Finlay Flowers, Kenya
 - James Finlay, Bangladesh
 - James Finlay, Kenya
 - James Finlay, Mombassa
- **Unilever Group of Companies, UK**
 - Unilever Tea Kenya Ltd.
- **Cargil Group, Indonesia**
 - PT Asiatic Jambi, Indonesia
 - PT Harapan, Kalimantan, Indonesia
 - Cargil Kenya Limited, Kenya
- **Socfinco Group, Belgium**
 - PT Socfindo, Indonesia
 - Okumo Oil Palm, Nigeria
- **Kenya Tea Development Agency (KTDA)**
 - Chai Warehousing Ltd
 - Chai Trading Ltd
- **Sameer Group**
 - Sasini Tea & Coffee Limited Kenya
- **Tata Group, India**
 - Tata Tea Limited, India
 - Tata Coffee Limited, India
- **Apeejay Group, India**
 - AFT Industries Limited
 - Empire & Singlo Tea Limited
- **Carsons Group, Srilanka**
 - PT Agro Indomas, Indonesia
 - PT Agro Bukith, Indonesia

- **Agro Hope Sdn. Bhd, Malaysia**
- **East Usambara Tea Company Ltd, Tanzania**
- **Parry agro Industries Limited, India**
- **Hapugastenne Plantations Ltd., SriLanka**
- **Udapussellawa Plantations Ltd. , SriLanka**
- **Kahawatte Plantations Limited, SriLanka**
- **Horana Plantations Limited, Srilanka**
- **Watawala Plantations Limited, Srilanka**
- **Eastern Produce Kenya Ltd, Kenya**
- **Mbaraki Port Warehouses (Kenya) Limited**
- **IJM Plantations Sdn. Bhd, Malaysia**
- **Mastermind Tobacco Ltd, Kenya**
- **Tamburlaine Wines, Australia**
- **Mason Winery, Australia**