

## **Non-Negotiables for implementation of Micro Irrigation Project**

- 1)** DHSOs should give wide publicity to the Micro Irrigation - Per Drop More Crop scheme (TGMIP) of the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) in newspapers / Electronic Media etc., and by conducting the awareness programmes at village level in coordination with line departments i.e., Agriculture, Horticulture, PR & RD Department etc.
- 2)** Registration of applications online is mandatory. Registration of MI applications shall be done through Mee-Seva Centres and in TGMIP online portal through OTP to Aadhar linked mobile no. only and Form-'1B' is mandatory.
- 3)** The Farmer Registration Screen is made available in all Mee-Seva centers and through TGMIP online portal for facilitating easy registration to farmers and transparency in the registration.
- 4)** Aadhar is mandatory for every individual irrespective of age of the individual for new Registrations.
- 5)** Declaration from farmers regarding survey No., Details of Bore well, its discharge, Electricity Connection, Pressurized systems, Details of lease of land and Non availment of subsidy, secure the MI system for 7 years. I will be held responsible for any mis-utilization of MI system should be obtained on Bond paper worth of Rs.20/- at the time of submission of hard copies of completion certificate, invoices etc., (Annexure -).
- 6)** Every MI system installed with the subsidy from the Government, should be Geo- tagged through Bhuvan app which is monitored by the Central Government and it will be monitored by the Satellite System.
- 7)** Mobile Number will be allocated to official of a particular geographical area uploaded with this "Mobile Geo-Fencing App" and the same should be passed on to the successor in the case of transfer of the concerned official.
- 8)** Preference may be given to Small and Marginal Farmers, SC/ST/BC/Women and differently abled (PH) farmers.
- 9)** DHSOs should ensure that atleast 25% of the financial target allocated to the District must be earmarked to Agriculture crop sector in drip including Sugar cane, Sericulture etc.

- 10)** DHSOs must ensure that, at least 50% of budget allocation and targets should be earmarked exclusively for SF/MF farmers.
- 11)** Preference shall be given to the cases under convergence with the schemes / Departments such as MIDH, RKVY, RD and Agriculture Department etc.
- 12)** Approval of District Mission Committee (DMC) is must for issue of administrative sanctions for implementation of the scheme.
- 13)** Every aspect from Registration of applications, progress reports, generation of BOQs to releases shall be through online only.
- 14)** DHSOs / DHSCOs& MI companies should ensure the land suitability, assured water source, energization before issue of 10% sanctions.
- 15)** The beneficiaries should have Aadhar linked bank account preferably having Real Time Gross Settlement (RTGS) transfer facility.
- 16)** DHSOs must personally verify Bore Well discharge, Power availability, Water and Soil suitability before giving 10% sanctions for above 1 ha which is mandatory.
- 17)** The Micro Irrigation Company is responsible for bench mark survey, design, installation, correctness of extent of area, quantities of the components. Utmost care should take in survey and design of the MI system and it must be designed as per Bore Well discharge, power availability (hours per day) and water requirement of the crop.
- 18)** Priority shall be given to individual families rather than members of same family group (family is a unit comprising of wife, husband and minor children). Preference to be given to the new farmers.
- 19)** Cluster Level Horticulture and Sericulture Officer (CLHSO) should ensure 100% inspection at the time of preliminary survey by verifying the power supply, functional water source, discharge of bore well, cropping pattern and water requirement of the crop. After installation of MI systems, 40% random field verification should be done by MI Company State Coordinator. At the time of final inspection CLHSO should ensure that the installations are done as per the designs submitted by the MI Company.

**20)** DHSOs, CLHSO should inspect before sending proposals for 90% payments of the completed installations as mentioned below:

- ❖ MLHSO – 100% Mandatory inspections
- ❖ CLHSO – 100%
- ❖ DHSCO (APD) – 50% (In their Jurisdiction)
- ❖ DHSO – 55% (In case of each DHSCO jurisdiction)

**21)** The inspections should be done at random (in case of DHSO & DHSCOs) covering all MI Companies and the jurisdiction of all CLHSO on each payment. The DHSO & DHSCOs has to complete the % of Random Inspections indicated and enter the same online in the screen provided for this purpose.

**22)** Monitoring the implementation and review of the programme should done on monthly basis by District level and Mandal level monitoring committees.

**23)** Micro Irrigation Companies should conduct extensive awareness campaigns, trainings, After Sales Service and should give acid treatments, fertigation & irrigation schedules etc., on monthly basis.

**24)** Micro Irrigation Companies should make available service centers in all Districts in the State at least one at every Division Headquarters.

**25)** It is the DHSOs responsibility to update the Progress reports on 2nd of every month.

**26)** Crop Manual (containing crop wise agronomical, irrigation and fertilizer schedules) in Telugu should be printed by the Micro Irrigation Companies and handed over to the farmers after installation of Micro Irrigation System along with other certificates etc.

**27)** Supply of Fertigation equipment i.e., Ventury is mandate with every installation of Drip System.

**28)** One Drip lateral Roller for each drip beneficiary farmer is optional. The cost of drip lateral Roller @ Rs.1500/- is included in unit cost of drip system.

## **1. INTRODUCTION**

The Government of India has formulated a new scheme i.e., Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) by converging, consolidating and subsuming all ongoing as well as newly proposed programmes related to sustainable agriculture including National Mission on Micro Irrigation (NMMI) & National Mission for Sustainable Agriculture with a special emphasis on soil and water conservation, water use efficiency, soil health management and Rainfed Area Development.

NMMI & NMSA which is implemented by MIP up to 2014-15 is subsumed under PMKSY w.e.f. 01-04-2015.

PMKSY has the following four major components:

- 1) Accelerated Irrigation Benefit Programme(AIBP)
- 2) PMKSY(Har Khet Ko Pani)
- 3) PMKSY (Per Drop More Crop)
- 4) PMKSY (Watershed Development)

Out of the above 4 components, Micro Irrigation (Per Drop More Crop), will be implemented by TGMIP, Horticulture Department. The components under PMKSY - Per Drop More Crop are:

- 1) Drip irrigation for wide spaced crops(Online)
- 2) Drip irrigation for closed spaced crops(Inline).
- 3) Micro sprinkler
- 4) Mini sprinkler
- 5) Sprinkler systems
  - a) Portable
  - b) Semi permanent
  - c) Rainguns

## **2. IMPORTANT GUIDELINES TO IMPLEMENT THE PROGRAMME**

### **2.1 Plan of action**

- 2.1.1** The physical and financial targets should be strictly adhered to without any deviation under each component.
- 2.1.2** DHSOs should achieve the target allotted with the existing subsidy pattern for Drip and 75% subsidy (limited to 1 ha) for Portable Sprinkler.
- 2.1.3** Achievement of targets both physical and financial under SCSP (16.05%) and TSP (9.55%) is mandatory and at least 25% for Backward Class farmers & Not exceeding 10% of financial target shall be covered by other farmers (2-5ha).
- 2.1.4** The component wise targets for Drip and Sprinklers communicated by Head Office have to be followed by each district and by each MI Company.
- 2.1.5** DHSOs should ensure that atleast 25% of the financial target allocated to the District must be earmarked to Agriculture crop sector in drip including Sugarcane, Sericulture etc.

### **2.2 Norms**

- 2.2.1** The Farmer Beneficiaries who have already availed the benefit of Micro Irrigation cannot avail further assistance for the same land, for the next 7 years.
- 2.2.2** Priority shall be given to individual families rather than members of same family group (family is a unit comprising of wife, husband and minor children). Preference to be given to the new farmers.
- 2.2.3** The registered beneficiary should be sensitized and awareness programmes are to be conducted on utilizing the MI system. MI Companies must ensure land suitability, assured water source and energization at time of benchmark survey, preliminary inspection, BOQ inspection etc., by visiting farmers fields and should submit applications based on such suitability only to DHSOs office for 10% sanction. DHSOs to ensure the land suitability, assured water source and energization before issue of 10% sanctions.
- 2.2.4** The beneficiaries should have live Aadhar linked bank account preferably having Real Time Gross Settlement (RTGS) transfer facility.
- 2.2.5** Selection of MI Company is the choice of the beneficiary and it should be within the MI Suppliers allotted to the district.

- 2.2.6** GPS has to be invariably used to find out the exact location of the installations and appropriate extent of the field. Coordinates at water source shall be recorded as land mark. These coordinates should be noted in Bench mark survey report and Beneficiary application. These coordinates should be invariably checked during preliminary and final inspection by the inspecting authorities. Coordinates should be obtained at all corners and bore well point and the same should be entered in online BMS Report.
- 2.2.7** Proposed and installed area should be tallied invariably with the Geographical Positioning System (GPS) with a margin of (+) or (-) 5% variation.
- 2.2.8** The DHSOs should maintain separate registers for issue of 10% & 90% applications to CLHSOs for verification. The date of issue and date of return should be noted in the register for verification by the inspecting officers.
- 2.2.9** Sanction of 10% mobilization advance and proceedings for release of 90% final payment should be done as per the seniority of the master register while submitting the BOQ and invoice respectively by MI Companies.

### **2.3 Online Process**

- 2.3.1** Online process should be done in their respective logins only i.e.,
- Benchmark survey and Bill of Quantities (BOQ) by MISupplier.
  - Approval of BOQ by MIE&DHSO.
  - Approval of proposals by DHSO.
- 2.3.2** The process flow of implementation of Per Drop More Crop programme should be done through online only i.e. registration of beneficiary through Mee-seva/ TGMIP online portal, preliminary inspection, BOQ generation, Bench mark survey report, 10% mobilization advance, invoice, commissioning and completion report, Micro Irrigation Engineer (MIE) approval, Horticulture Officer (CLHSCO) (T) approval, DHSOs approval, generation of 90% proceedings and payments to MI companies.
- 2.3.3** The District wise progress will be considered through online reports only.

## 2.4 Random inspections by the District Team

2.4.1 DHSOs, CLHSO should inspect before sending proposals for 90% payments of the completed installations as mentioned below:

- ❖ MLHSO – 100% Mandatory inspections
- ❖ CLHSO – 100%
- ❖ DHSCO (APD) – 50% (In their Jurisdiction)
- ❖ DHSO – 55% (In case of each DHSCO jurisdiction)

by the DHSO. The inspections should be done at random (in case of DHSO&DHSCO s) covering all MI Companies and the jurisdiction of all CLHSOs on each payment. The DHSO & DHSCOs has to complete the % of Random Inspections indicated and enter the same online in the screen provided for this purpose.

### 3. TIMELINES FOR IMPLEMENTATION OF THE PROJECT

S. No	Process flow	Timeline	Responsible Officers / Personnel
1	Wide publicity through advertisement at state level in 2 leading prominent newspapers.	-	DHSO
2	At present Registration of the applications is done at Mee-seva centres/TGMIP online portal. The DHSO should maintain the day wise seniority list of applications.	Immediately after receipt of application	Mee-Seva & Suptd., of DHSO office.
3	The applications which were already registered in the TGMIP online portal and applications through Mee-seva should be scrutinized and verified or finalization of the Beneficiaries.	2 days after receipt of applications	CLHSO(T), DHSCO (APD), Superintendent, MIE& DHSO
4	Preliminary inspection	Within 7 days after scrutiny	Beneficiary, CLHSO, MI company Representative
5	Bench Mark Survey, BOQ & Design Collection of farmer Contribution	Within 7 days after completion of Preliminary inspection	Beneficiary, CLHSO, MI company
6	Submission for 10% Administrative sanction.	Within 10 days after submission of BMS, BOQ & Design	MIE, Suptd., & DHSO
7	Sending of list for display at GramaSabha and calling for objections.	Immediately after receipt 10% Administrative Sanction(Objections should be received within 3 days after display of sanctioned list in GramaSabha)	DHSO, DHSCO (APD), /CLHSO(T), CLHSO
8	Generation of individual proceedings and Transfer of BC to concerned MI companies along with proceedings.	Within 3 days after completion of GramaSabha Time	MIE & DHSO
9	Trench Marking	Within 7 days after issue of Individual Proceedings	MI company
10	Trenching	Within 15 days after Trench marking	Beneficiary



<b>S. No</b>	<b>Process flow</b>	<b>Timeline</b>	<b>Responsible Officers / Personnel</b>
11	Installation of MI Systems	Within 15 days after Trenching by the Beneficiary	MI company
12	Submission of Invoice & other required documents for Final payment in DHSOs office	Within 7daysin full shape after completion of Installation	MI company
13	Final Inspection	Within 7 days after submission of invoice	Beneficiary, CLHSO & MI company Representative
14	Random Inspection	Within 10 days after completion of Final inspection	DHSCO (APD)&DHSO
15	Final Payment		Immediately after completion of random inspection. The DHSO should obtain approval of District Collector and submit to head office for payments.

The entire process of installation of MI System right from preliminary inspection to final payment shall be completed within 120 days.

## **4. METHODOLOGY OF IMPLEMENTATION OF THE PROGRAMME**

### **4.1 Selection of Beneficiary**

#### **4.1.1 Definition of beneficiary :**

**4.1.1.1** The term "Beneficiary" under the project is defined as "every land holder, who possesses own land or leased land for a period of atleast for the projected life of the irrigation system (10 years) for the purpose of growing crops and who has a water source fitted with a pumping unit, either own or shared." The tenant farmer should submit registered lease agreement for atleast 5 years.

#### **4.1.2 Definition of family :**

**4.1.2.1** Family is a unit comprising of wife, husband and minor children

#### **4.1.3 Definition of beneficiary categories:**

**4.1.3.1** Farmers with holding up to 2.5 acres of dry land or 1.5 acres wet land are defined as Marginal farmers.

**4.1.3.2** Farmers with a holding up to 5 acres dry land or up to 2.5 acre of wet land are defined as Small farmers.

**4.1.3.3** Farmers with land holding above 5 acres dry land or above 2.5 acres of wet land are defined as Other farmers.

#### **4.1.4 Selection of beneficiaries :**

**4.1.4.1** The Project Director (PD), OFWM is responsible for organizing awareness campaigns in potential Villages, Mandals to sensitize, motivate and convince beneficiaries to take up MI System on priority & 100% coverage of villages declared as Over Exploited villages by Groundwater Dept.

**4.1.4.2** The team comprising the officers of OFWM and allied departments (Horticulture, Agriculture, Sericulture, Sugar cane, Oil fed and ITDA Departments) and representatives of MI companies should visit all potential villages very frequently to sensitize the beneficiaries. The team should conduct a detailed village wise survey involving the elected representatives of Panchayat and Revenue officials and prepare a list of eligible beneficiaries and their applications should submit in the MPDOs office etc., as mentioned in time line point 3, along with details of land holdings, crops being grown / to be grown.

#### **4.1.4.3 CONVERGENCE WITH OTHER DEPARTMENTS**

- a. 100% convergence with MIDH, RKVY, Oil palm & State plan programmes.
- b. Convergence with SC Corpn. for 100% coverage of SC farmers having assured irrigation for all the crops.
- c. Convergence with Tribal Welfare, ITDA & MADA for 100% coverage of ST farmers having assured irrigation for all the crops.
- d. Convergence with RD and Agriculture Department.

**4.1.4.4** The Registration of the applications shall be done by the farmer through Mee-seva centres/TGMIP online portal wherein unique ID number will be generated.

**4.1.4.5** After registration, the CLHSO shall submit the hard copies of the applications along with required documents submitted by the farmer to the DHSO.

**4.1.4.6** Beneficiary may indicate choice of MI Companies (3 No.s) in the order of priority at the time of registration for installation of MI system.

**4.1.4.7** A preliminary inspection has to be conducted by both MI supplier and CLHSO of TGMIP jointly / separately so as to ascertain the eligibility such as ownership of the beneficiary over the proposed land, energy connection, assured water source with required pumping system, suitability of the soil, water etc. to submit a report in the prescribed proforma.

#### **4.1.5 Order of Preference for the selection of Beneficiaries:**

**4.1.5.1** Priority shall be given to SC, ST/ BC farmers Marginal, Small and Women & PH farmers.

**4.1.5.2** Priority shall be given to separate individual families rather than the member of the families of the same family group (Family is a unit comprising of wife, husband and minor children). Preference to be given to the new farmers.

**4.1.5.3** Preference shall be given to the cases under convergence with the schemes / Departments such as SHM, RKVY, DWMA and RAD of Agriculture Department etc.

**4.1.5.4** Persons with disabilities shall be accorded priority in the implementation of the scheme.

**4.1.5.5** Every application submitted by the beneficiary whether it is accepted or rejected should be kept separately for future reference and record.

#### **4.1.6 Determination of Beneficiary category :**

**4.1.6.1**The total land holdings of the farmer as per the Title Deed shall determine the category of farmers.

**4.1.6.2**In case of tenants, the extent of land held by the owner / Registered Lease holder shall determine their eligibility category not exceeding 5 ha limit either by Owner / Lessor.

**4.1.6.3**In the absence of title deed, other documents like attested copy of the Registered Sale Deed along with the Encumbrance Certificate from the Registration Department, shall determine the category of the Beneficiary Farmer, duly taking the total land holdings of the farmer into consideration.

In the selection of beneficiaries, not less than:

- a. 16.05% of the total financial target shall be covered by SC farmers under SCSP.
- b. 9.55% of the total financial target shall be covered by ST farmers under TSP.
- c. Not less than 25% of total financial target shall be covered by BC farmers.
- d. Not less than 50% of the total financial target shall be covered SF/MF farmers.
- e. Not exceeding 10% of financial target shall be covered by other farmers (more than 5 acres land holding/2-5 ha)

#### **4.1.7 Approval of beneficiary list:**

**4.1.7.1**The list of eligible beneficiaries approved by the Collector & Chairman of District Mission Committee (DMC) should be displayed in the GramaSabha duly attested by the DHSO. Objections if any should be called for within 3 days after display of the list

#### **4.1.8 Area limit :**

The area will be restricted to a farm size of 5 ha / 12.5 acres per each family. Beneficiaries who have already availed the benefit of the scheme cannot avail further assistance for the same land for the next 7 years.

#### **4.2 Subsidy pattern: (As per NMSA)**

Government of India have revised the Operational Guidelines under PMKSY which are follows:

SI. No	Category	Gol subsidy pattern			TGMIP Additional State Share as per Guidelines
		Total	Gol Share	State Share	
1	2	3	4	5	6
1	SF / MF	55	33	22	35 to 45
2	Others	45	27	18	35 to 45

#### **Note:**

1. For Oil palm the central share has to be met from RKVY Oilpalm funds

**Note: But from year 2014-15 onwards in case of Drip- differential subsidy as per GO Ms. No.28,dt:09-12-2014& Govt., Memo No.3072 /H&S/ 14, dt:06-01-2015 as should below shall be followed.**

"All category farmers in revenue village irrespective of their economic status are eligible for Drip Irrigation / Micro Irrigation systems **up to 5 ha** or land holding possessed by the farmers in Title Deed, whichever is less, with the following subsidy pattern:

- > All SC/ST Farmer are eligible for 100%subsidy.
- > All BC, SF, MF farmers are eligible for 90%subsidy.
- > All other farmers are eligible for80%.
- > Portable Sprinklers for all category farmers are eligible for 75% subsidy limited to 1 ha. Unit only.

In case of Portable sprinklers 75% subsidy of unit cost Rs.16,671/- per Ha will be followed.

### **4.3 Documentation required for release of 10% Mobilization advance:**

- 4.3.1** Prescribed application form which is given at Annexure- 1 shall be followed in all Districts.
- 4.3.2** Application form duly incorporating the Aadhar linked bank account with IFSC code, details with the latest passport size photo. The contact number of the beneficiary is mandatory.
- 4.3.3** All columns should be filled in every application.
- 4.3.4** Copy of the Title Deed or1(B) Register or Pattadar Pass Book duly attested by the Deputy Tahsildar /Tahsildar
- 4.3.5** Wherever the original Title deeds are in the custody of bank, a Photostat copy of the same duly attested and endorsed by the bank manager may be accepted.
- 4.3.6** In the absence of Title Deed, other documents like attested copy of the Registered Sale Deed along with the Encumbrance Certificate from the Registration Department, shall determine the category of the Beneficiary Farmer, duly taking the total land holdings of the farmer into consideration.
- 4.3.7** Copy of the combined sketch / FMB (Field Measurement Book).
- 4.3.8** In case of Lease agreements PD / APD must personally examine and inspect to ensure genuineness.
- 4.3.9** Copy of Aadhar Card/Ration card/Electoral Photo Identity Card/Passbook of PACS /Bank pass book/Driving License/ Pass port etc.

- 4.3.10** In case of water sharing cases, water sharing certificate duly signed by VRO and by both farmers and MIAO & MI Company must see whether water from sharing borewell can cater for original & sharing land or not.
- 4.3.11** Copy of Caste certificate attested by any Gazetted officer in case of SC/ST & BC farmers.
- 4.3.12** After survey, the MI Company should submit Bench Mark survey report and Bill of Quantity (BOQ) and GPS polygon sheet.
- 4.3.13** Remittance of Non-subsidy amount should be given in the form of DD / UTR No.
- 4.3.14** Preliminary inspection report (PIR) along with the photograph of farmer, MLHSCO, CLHSO, MI Company representative and land marks in back drop should be submitted by CLHSO in the prescribed format.
- 4.3.15** The checklist for sanction of 10% Mobilization advance is at **Annexure-9**.
- 4.3.16** While processing the application in PD's office, it should be ensured that the beneficiary has not availed subsidy for the same land within 5 years preceding the date of sanction orders issued.
- 4.3.17** The DHSOs / DHSCOs office should ensure that the beneficiary has not utilized subsidy previously in the data base of beneficiaries available from since last 7 years.
- 4.3.18** A stamp containing matter i.e., "Checked and verified the database and the beneficiary has not availed subsidy for the same land within 7 years" should be affixed on each application verified by the Superintendent duly attested by DHSO.

#### **4.4 Preliminary inspection :**

- 4.4.1** The CL Horticulture & Sericulture Officer, MI Company Representative should jointly conduct preliminary inspection of the proposed field along with beneficiary.
- 4.4.2** The CLHSO should verify whether the beneficiary has availed MIP subsidy for the same land previously within 7 years from the date of sanction order issued.
- 4.4.3** During the inspection the following issues should be observed and ensured by MIAO / MI Company:
- 4.4.3.1 Assured water source
  - 4.4.3.2 Energization
  - 4.4.3.3 The existing crop and spacing.
- 4.4.4** Farmer having own land with assured water source and pump set with authenticated power connection are eligible. Pump sets having Oil Engines without power connection are also eligible. The Oil Engine should generate the required pressure suitable to the requirements of MI System.

- 4.4.5** In case of annual crops the cropping pattern has to be ascertained from the beneficiary and noted in the Preliminary Inspection Report (PIR).In case of Orchard crops the age of the trees and number of plants has to be noted.
- 4.4.6** GPS instrument should be used to determine the extent and exact location of the land.
- 4.4.7** GPS coordinates fixing the land boundaries and water source as land mark.
- 4.4.8** Depth of Bore well and water delivery pressure may be checked before designing of drip irrigation system.
- 4.4.9** During the preliminary inspection, a digital photo graph with date& time covering beneficiary, Micro Irrigation Area Officer (MIAO), representative of MI Company depicting the water source and land mark of the respective field should be taken.
- 4.4.10** The DHSOs / DHSCOs and District Coordinating Officer (DCO) of MI Companies to ensure 100% preliminary inspection of the proposed field prior to sanction.
- 4.4.11** The preliminary inspection should be completed by the CLHSO along with MI Company representative & farmer within 7 days after receipt of application from DHSOs /DHSCOs office.
- 4.4.12** The CLHSO should submit the preliminary inspection report with the signature of CLHSO in the format prescribed(**Annexure – 5**)

#### **4.5 Bench Mark survey, Design of MI systems and Preparation of BOQs:**

#### **4.6 Bench Mark Survey (Annexure – 6):**

- 4.6.1** The MI Companies have to complete Bench Mark Survey, preparation of BOQ and Design within 7 days after completion of preliminary inspection by the MIAO, MI Company representative & farmer.
- 4.6.2** MI companies should design the Micro irrigation system for annual crops taking into account the cropping pattern having same water requirement for growing a range of crops by the beneficiary. This recommendation is only for sustainable use of MI system by the beneficiary.
- 4.6.3** While conducting the bench mark survey the land boundaries of surrounding lands with survey numbers and names of the beneficiaries and land marks shall be depicted so as to enable to identify and locate the land of the beneficiary. Rough route map should also be given.
- 4.6.4** The following conditions are mandatory.
  - 4.6.4.1GPS Coordinates

- 4.6.4.2 Power availability: Number of hours per day
- 4.6.4.3 Water yield (LPS)
- 4.6.4.4 Water availability: Number of hours per day.
- 4.6.4.5 Crop Area and Spacing (cropping pattern)
- 4.6.4.6 Area proposed under Micro Irrigation (ha)
- 4.6.4.7 Motor Capacity in HP
- 4.6.4.8 Diameter of outlet pipe (mm)

#### **4.7 Design :**

The MI Companies should submit designs prepared manually by qualified Technical person (Graduate in Agricultural Engineering / Civil Engineering) on a drawing sheet with legend reflecting field on ground for easy understanding of the design. Preference may be given for CAD designs.

- 4.7.1** The design of MI systems for Water Sharing case has to be made by taking the total area as one unit for effective functioning of MI system.
- 4.7.2** The design layout should indicate the entire area in which the individual areas are clearly earmarked.
- 4.7.3** Water sharing certificate to be obtained from the beneficiaries sharing common water source duly signed by the VRO (**Annexure-7**).

#### **4.8 Preparation of Bill of Quantities (BOQ)(Annexure – 8):**

The MI companies should prepare BOQ based on the design & spacing. The BOQ should clearly indicate the extent proposed for MI irrigation, spacing, number of plants, type of MI system proposed. BOQ should be prepared with estimated quantities of MI components. The rates proposed in the BOQ should be as per the approved rates of MIP as per GO.Ms.No.40, A&C(H&S) Department, Dt:28-08-2017 & GO.Ms.No.45, A&C(H&S) Department, Dt:21-09-2017. The following Points are to be considered for preparation of BOQs.

##### **4.8.1 Head Control Unit (HCU):**

- 4.8.1.1** Only one HCU for one pumping system is to be provided.
- 4.8.1.2** Where the bores are interconnected for augmenting discharge, only one HCU is enough for the combined discharge.
- 4.8.1.3** A suitable platform made of cement concrete is required for HCU for its longevity and to arrest leakages. Beneficiaries are to be motivated for construction of platform at their own cost.

##### **4.8.2 Fertigation:**

Either Fertigation Tank or Ventury assembly is mandatory as opted by the beneficiary. The details are covered under chapter– 5



### **4.8.3 Screen Filter**

According to the guidelines of MIP the unit cost worked out and communicated are inclusive of screen filter. However, if the water quality warrants either sand filter or disc filter or hydro cyclone filter, is also permissible. Installation of Sand filter is mandatory if the water source is through open well / Farm Ponds. The details are covered under chapter - 5.

### **4.8.4 Water Sharing:**

- 4.8.4.1** The applications for water sharing can be considered only when the borewell / well / pump set has additional capacity to irrigate more area.
- 4.8.4.2** The design of MI systems for Water Sharing case has to be made by taking the total area as one unit for effective functioning of MI system.
- 4.8.4.3** The design layout should indicate the entire area in which the individual areas are clearly earmarked.
- 4.8.4.4** Irrigation plans are also to be mentioned field wise in the design. Similarly the BOQs are to be made for entire system and proportionate BOQs for the individual beneficiaries.
- 4.8.4.5** In case of water sharing, using common water source, the cost of the additional pipeline should not be part of the estimates & BOQs of MIP.
- 4.8.4.6** The cost of the HCU can be proportionately divided among the beneficiaries under common water source as per their land holdings.
- 4.8.4.7** The water carrier and distribution systems can be calculated as per the extent of the beneficiaries.
- 4.8.4.8** One common file is to be maintained with sub-files for the water sharing proposals for cross referencing.
- 4.8.4.9** The transport, installation, accessories & fittings costs shall be apportioned proportionately among the water sharing beneficiaries.
- 4.8.4.10** DHSOs / DHSCOs has to personally inspect water sharing installations before proposing for payment of 90%subsidy.

### **4.8.5 Double lateral:**

Double lateral should be considered for orchard crops of above 8 years of age with 8 Drippers per plant. The details are covered under chapter – 5.

### **4.8.6 Oil Palm :**

**4.8.6.1** Tripartite agreement is made between the beneficiary farmer, Sugarcane Company and MI company for providing drip irrigation to sugarcane crop.

**4.8.6.2** The farmer share to be collected from the concerned Sugarcane company  
Separate individual file shall be maintained for each beneficiary and file shall contain all relevant documents pertaining to each case.

**4.9 Process flow for release of 10% mobilization advance :**

After preparation of BOQ, design, Bench mark survey report by the MI Company, the company has to enter the BOQs data and bench mark survey report on online.

The farmer contribution has to be collected within 7 days after preparation of BOQ.

**4.9.1** The MIE shall verify the designs, BOQ, Bench mark survey report and all the documents required for sanction of 10% mobilization advance as per check list (**Annexure -9**).

**4.9.2** During scrutiny, the MIE should ensure that the area proposed for drip irrigation on the application, preliminary inspection, BOQ and Bench mark survey report should be the same and should not exceed the total extent in land document.

**4.9.3** Administrative sanction will be accorded to the crop as per the choice of the beneficiaries in the application form.

**4.9.4** The Superintendent should verify whether the beneficiary has remitted beneficiary contribution to the DHSOs / DHSCOs account as indicated in the online calculation.

**4.9.5** After the approval of proposals by the DHSOs / DHSCOs, the proposals will be submitted to the District Collector for approval duly enclosing downloaded formats.

**4.9.6** The 10% mobilization advance should be sanctioned to MI companies within 7 days after submission of BMS & BOQ and Design.

**4.9.7** After the approval of the District Collector, the requests for release of 10% mobilization advance should be processed.

**4.9.8** After the approval of District Collector, DHSOs /DHSCOs to issue sanction proceedings to the individual beneficiaries, MI Company, MLHSCO, CLHSO and concerned.

**4.10** Issue of administrative sanctions for the entire District target for the every financial year shall be completed as far as possible before 10th February of the financial year, so as to enable to achieve the target and request for additional target from GOI.

#### 4.11 Pre installation:

##### Marking:

**4.11.1** The MI Company should give marking in the field of the beneficiary as per the design within 7days from the date of Administrative sanction.

##### Trenching:

**4.11.2** Beneficiary has to take up trench opening as per the design approved and marking given by the representative of MI Company within 21 days after receipt of sanction proceedings. Otherwise the sanction will be deemed to have been cancelled. The beneficiary has not taken up the trench within the prescribed period i.e., 21 days, the beneficiary has submit the application afresh.

It is the responsibility of the farmer and MI Company to get the trenches dug within the specified time to avoid the delay in installation drip irrigation system. The width of trench should be 45 cm to 70 cm and the depth of the trench should be 75 cm or as instructed by the MI Company representative. The trenches should be in straight line, farmers should ensure that there are no stones or any sharp objects in the trenches.

**4.11.3** Trenching has to be done by the beneficiary on his own cost and also the beneficiary is responsible for closing of the trench immediately after trail run.

**4.11.4** DHSOs / DHSCOs should coordinate with the MI Company and beneficiary and ensure that the installation is completed within the stipulated time i.e.15 days, after Trench opening by the beneficiary. If the installations are not completed by the MI Company the administrative sanction should be cancelled

**4.11.5** CLHSO should submit Fortnightly report on progress of installation in his / her jurisdiction in the following proforma.

Sl. No	Name of the MI Company	No. of Administrative sanctions issued	No. of cases trenching completed	Balance(2-3)	Balance No.		Remarks
					Marking to be given by the MI Company	Trench yet to be started	
1	2	3	4	5	6	7	8
1							
2							
Total							

**4.11.6** Preferably a suitable size of platform of brick masonry or cement concrete should be constructed by the farmer for installation of Head Control Unit (HCU) and shade may be provided to avoid rusting of HCU.

**Installation process:**

**4.11.7** MI Company shall supply the material as per BOQ only after trenching is completed by the beneficiary.

**4.11.8** The MI Company should give delivery challan in telugu for the quantities of MI material supplied to the beneficiary with acknowledgement.

**4.11.9** MI Company should install the system as per design already submitted with BOQ.If any change in design arises depending on the field condition the design may be changed. Installation of MI system should be done within the quantities mentioned in BOQ. Increase in quantities of components in Invoice will not be permitted in Online system

**4.11.10** MI Company may install the MI System prior to plantation / sowing but at the time of final inspection there should be a standing crop and photographs taken at the time of final inspection should clearly depict the crop, HCU and distribution and MI Carrier system. Subsidy may be calculated as per para No.4.15.9..

**4.11.11** Components approved by MIP are only to be installed in the beneficiaries field.

**4.11.12** The MI Company should install NON METALLIC control valves (Non-return valves, Throttle valves, Ball valves/flow control valves) of approved brands only.(Annexure-17 MIP, Technical specifications-12)

**4.11.13** The MI components should have Bureau of Indian Standards (BIS) and should be embossed with "**Made for TGMIP**".

**4.11.14** The installed system should match the water requirement of the crop.

**4.11.15** Necessary orientation and training is to be given to beneficiaries for operation, maintenance and agronomic practices to be followed for irrigation the crop with drip / sprinklers irrigation.

**4.11.16** Installation may be allowed prior to plantation / sowing, however the 90% final payments shall be done only when there is standing crop installed with drip.

**4.12 Points to be checked during installation.**

**4.12.1** Farmer to check that the material received is free from any defect and damages.

- 4.12.2** MI Company should check that the trenches are done as per the layout.
- 4.12.3** Check that the installation is done as per design
- 4.12.4** Check the system for the leakages by adjusting the design pressure for each section and then close the trenches immediately.
- 4.12.5** DHSOs / DHSCOs to ensure for issue of proper warranty (Annexure -10)and a user's manual for running & maintenance of the system to the beneficiary in Telugu.
- 4.12.6** A certificate towards successful installation / commissioning of the system is to be obtained from the beneficiary **(Annexure -11& 12).**

#### **4.13 Post installation :**

- 4.13.1** The MI Company has to ensure that on the day of installation, atleast 2 Photographs have to be taken covering HCU, Control valves, laterals spread on the field and also along with standing crop. The photos should display the date and time
- 4.13.2** The MI Company should demonstrate the usage of ventury / fertilizer tank and functioning and maintenance of system
- 4.13.3** The MI Company should give the address particulars of contact person and also the place of the availability of spare parts.
- 4.13.4** The MI Company has to submit the final invoice and other required documents for release of 90% within 7 days after completion of installation.

#### **4.14 Documentation required for release of 90% payment:**

- 4.14.1** Original invoice for the MI components installed should be given by the MI Company.
- 4.14.2** Commissioning and completion certificate signed by CLSHO, Farmer and MI company representative **(Annexure-11).**
- 4.14.3** Guarantee letter from the MI Company **(Annexure-10).**
- 4.14.4** Delivery challans with the signature of the farmer.
- 4.14.5** In case of change of design updated design should be enclosed.
- 4.14.6** Certificate from farmer for release of 90% amount.
- 4.14.7** Final inspection report duly filled and signed by the farmer, CLSHO, MI company and check whether the Random inspection by the district team is completed or not.
- 4.14.8** The check list for release of 90% final payment is given at **(Annexure-15).**

**4.14.9** Seniority on the basis of receipt of invoices should be maintained in a Separate register in the DHSOs / DHSCOs office. (**Annexure – 13**)

**4.15 Final inspection:**

**4.15.1** A schedule for inspection should be prepared as per the seniority on the basis of receipt of invoice in the DHSOs / DHSCOs office and final inspection to be completed within 7days.

**4.15.2** "Final inspections should be conducted by MLHSCOs and CLSHO based on the final invoice, Commissioning and completion certificate and design but not based on the BOQ" and also ensure that all lateral bundles should be cut and spread at the time of the inspection"

**4.15.3** CLSHO should ensure 100% of inspection of all installations under his /her jurisdiction within 7 days after submission of invoices in DHSOs /DHSCOs office.

**4.15.4 The inspecting authority (CLSHO/ DHSOs/ DHSCOs)** and MI Company concerned are jointly responsible for proper installations, the correctness of the extent of area, design, quantities of components supplied to the beneficiary and discharge of water uniformly from all emitters within a variation of 10%.

**4.15.5** During final inspection (CLSHO) **area & material should be tallied with final invoice** and Commissioning & completion certificate. If any shortage in area and material is noticed, notice should be issued to the concerned MI Company and after examining the explanation of MI Company, steps to be taken to deduct proportionate subsidy.

**4.15.6 Random Inspections:** Deputy Director of Horticulture/ DHSO has to coordinate and monitor the following percentage of random inspections.

CLSHO	–	100%	Mandatory inspections
DHSOs/ DHSCOs	–	55%	

At random covering all MI Companies and the jurisdiction of all CIHSOs on each payment and DHSOs / DHSCOs has to coordinate and monitor the percentage of Random Inspections. 100% MI beneficiary inspection by 3<sup>rd</sup> party evaluation to be conducted.

**4.15.7** Random inspections by the District team should be completed within 10 days after completion of final inspection by CLHSOs.

**4.15.8** The officer who is conducting Random Inspection has to sign with date and remarks on the Final Inspection Report given by the CLHSCO as per **Annexure – 14.**

- 4.15.9** Installed area should be tallied invariably with the Geographical Positioning System (GPS) with a margin of 5% variation.
- 4.15.10** At the time of final inspection for **inline system**, the following points shall be taken into consideration for making payment;
- a) When the beneficiary has applied for a crop having approved spacing and installation is done with reduced spacing, the payment should be restricted to approved spacing of that crop only.
  - b) If the sanction has been given for closer spaced crop and the installation is done for wider spaced crop, the payment should be restricted for wider spaced crop only.
  - c) If the beneficiary has been sanctioned for one crop and the installation is done for another crop with the same spacing and unit cost, the beneficiary is eligible for same amount of subsidy since there is no change in spacing and unit cost.
  - d) In cases where, there is a deviation in the crop compared to the administrative sanctioned crop, the payment shall be arranged on the following conditions;
    - ❖ At least 5 digital photos (with date) covering the beneficiary, CLSHO & MI Company representative clearly depicting the crop, laterals spreading in the field shall be attached to the file with a detailed notes addressed to the DHSOs / DHSCOs indicating the background of the case. Then the payment can be made of the approved unit cost and spacing of the actual crop available at the time of installation.
  - e) Distribution of the drip laterals and emitters should be in accordance with crop spacing duly ensuring effective root zone wetting.
- 4.15.11** Mere supply of material to the beneficiary by the MI Company cannot be treated as completed installation. The entire material should be installed in the field and a trial run has to be conducted in the presence of the beneficiary.
- 4.15.12** Subsidy should be given to the material exactly required, supplied and installed in the field as per the approved design. No subsidy shall be given for any extra material which is not required.
- 4.15.13** At the time of final inspection two photographs have to be taken, one photograph depicting HCU and **the land mark of preliminary inspection**

along with beneficiary, MI company representative and CLHSO, second one with long shot depicting the ball valves, flush valves, laterals, drippers etc.

The beneficiary should be covered in the photographs either in preliminary inspection or in final inspection.

**4.15.14** The beneficiary ID as generated through online should be painted on HCU.

**4.15.15** A sticker with a measurement of 12" x 4" duly mentioning the ID No. and proceeding No. of the farmer along with phone numbers of DHSOs / DHSCOs/ DCO of MI Company and Toll free number of the district should be adhered to HCU to be arranged by MI Company.

**4.15.16** Final inspection report should be submitted in (Annexure-14) by the CLHSO. DHSOs/ DHSCOs/ MIE should counter sign on the final inspection report submitted by the CLSHO after random inspection.

**4.15.17** DHSO & DHSCO Random inspection to be completed within 10 days after completion of final inspection by CLHSOs.

#### **4.16 Process flow for release of 90% subsidy:**

**4.16.1** The bills should be scrutinized on seniority basis for process of final payments. No bill shall be unattended to, without proper justification, beyond the time permitted.

**4.16.2** Superintendent / CLHSO (T) should scrutinize the claims as per the seniority of receipt of invoice as per the checklist in **(Annexure – 15)**.

**4.16.3** After the approval of proposals by the DHSOs / DHSCOs the proposals will be submitted to the District Collector for approval duly enclosing downloaded formats.

**4.16.4** Before sending proposals to the Collector, DHSOs/ DHSCOs should ensure Random inspections are conducted as mentioned in Para No 4.15.6 by selecting the installations in format available in the Online among the officers concerned through random basis.

**4.16.5** After the approval of the District Collector, the requests for release of 90% payment should be forwarded to PO's office. The consolidated proceedings approved by the District Collector should be sent to PO's office along with required certification that random inspections were conducted as per guidelines mentioned at Para No 4.15.6 and the systems are functioning satisfactorily for release of payments.



**4.16.6** On receipt of proposals of DHSOs / DHSCOs, for release of 90% payment through the online, the payment will be processed and will be released to MI Companies by Head office.

**4.16.7** 90% Payments have to be released to MI companies within 10 days after completion of Random inspection.

**4.16.8** Monitoring the implementation of the programme and to review the implementation status on monthly basis

**District level monitoring committee**

- Collector & Chairman, TGMIP - Chairman
- DHSOs/DHSCOs - Convenor
- CEO, ZP, - Member
- DAO - Member
- POITDA/ - Member
- PDDWMA - Member
- PDDRDA - Member
- PD, ATMA - Member
- Asst. Cane Commissioner - Member
- AGMNABARD - Member
- Iead Dist. Manager - Member
- EDSC Corpn., - Member
- POMADA/DTWO - Member
- Coordinator DATT centre - Member
- DD Groundwater - Member
- Progressive farmers representing each revenue division - Special invitees

**Mandal level monitoring committee**

- Mandal Parishad Chairman - Chairman
- ZPTC - Co Chairman
- CLSHO - Convener
- MPDO, Tahsildar - Members
- PO NREGS, HFC - Members
- President Mandal Mahila Samakhya - Member
- Five Progressive farmers covering all sectors - Special Invitees

**4.17 Refund of excess beneficiary contribution:**

The excess beneficiary contribution if any paid by the farmer has to be refunded at the time of Final payment to MI Company. Under any circumstances the excess non subsidy amount remitted by the farmer should not be kept in PDs office after release of final payment to the MI Company. This subject is to be monitored by the Superintendent.

## **5. MI SYSTEMS AND REQUIREMENTS**

**This chapter includes various types of MI Systems covered in NMSA guidelines.**

### **5.1 Inline drip systems**

This type of drip system is suitable for the row crops like vegetables, papaya, banana, sugar cane, Maize, Cotton, Turmeric etc.

### **5.2 On line drip systems**

On line drip systems are ideal for irrigating orchard crops where plant to plant spacing is more.

### **5.3 Double lateral system**

The system of two laterals (with 8 Drippers per plant) for the same row is used for the Orchards having more than 8 years of age to meet the water requirement.

### **5.4 MicroJet**

Micro jets are mostly used for irrigating Oilpalm and Banana which require more water.

### **5.5 Micro Sprinklers (up to 3 m radius of throw)**

Micro Sprinklers are mostly used for irrigating leafy vegetables, nurseries, hardening of seedlings etc,. Micro sprinklers are low radius sprinklers which have a radius of throw up to 3 m. Discharge of micro sprinkler varies from 20 lph to 150 lph.

### **5.6 Sprinkler Irrigation**

It is widely used for irrigating cereals, pulses, oil seeds and other field crops. The sprinkler irrigation systems may be portable, semi-permanent or large volume systems (Rainguns).

#### **5.16.5 Portable Sprinkler Irrigation System**

In portable sprinkler irrigation system, the HDPE pipes are used for mains and sub-mains which can be shifted from one place to another as per the irrigation schedule with respect to design layout. These types of sprinklers, having a radius of throw from 12m to 18m with a discharge of 1200 lph to 1800 lph.

#### **5.16.6 Large Volume Sprinkler Irrigation System(Raingun)**

Large volume sprinkler irrigation systems (Rainguns) are used where larger areas are to be covered with one or two sprinklers. These sprinklers have a discharge ranging from 10,000 lph to 32,000 lph and radius of throw from 24 m to 36 m. As these systems cover larger areas they require high pressure and high discharge pipes & pumps to operate them. These are preferred for irrigating crops spread over large areas in short time. Mostly use full for fodder crops.

#### **5.16.7 Semi-Permanent Sprinkler Irrigation System**

In this system, the piping network for main line and lateral lines are permanently buried with risers fitted on the lateral lines. The sprinkler nozzles are fitted on each riser pipe and can be easily shifted from one place to another to irrigate the required area in shifts as per the irrigation schedule or the crop water requirement. To reduce the system cost PVC pipes are being used in the design and plastic sprinkler heads are used in place of brass sprinkler heads. This system eliminates all the disadvantages of portable sprinkler system and helps in reducing the labor requirement considerably. Components of Micro Irrigation Systems.

#### **5.7** Screen Filters

The screen filters are characterized by filtration degree, filtration surface and filtration ratio. Filtration degree is designated in microns or mesh number. One of the main disadvantages of screen filter is the rapid accumulation of dirt on the screen's surface. Monitoring the pressure difference between the filter and outlet is necessary to prevent excessive dirt accumulation on the screen. The filter has to be flushed when the pressure difference between inlet and outlet reaches 0.5 bar. It is used as primary filter for shallow bore wells and as secondary filter for open water sources like open wells, canals, tanks, pond etc.

#### **5.8** Disc Filters

Disc filters are suitable for filtration of water containing mixed, inorganic and organic impurities. The casing is made of metal or plastic materials. The filtering element is a stack of grooved rings, tightened firmly by a screwed on cap or by a spring that is compressed by a water piston. The intersections of the grooves provide in-depth filtering. The disc filters have a higher dirt retention capacity than screen filters.

Disk filter used as primary filter for bore wells and secondary filter for open water sources.

#### **5.9** Sand filters /media filters:

To remove organic matter and inorganic contaminants from water sources like rivers, tanks and open wells sand/media filters are required. Media (sand) filters are available with the capacity to efficiently remove most types of physical plugging sources. The size and type of media used determines the degree of filtration. The finer the media, the smaller the particle size that will be removed shows the relationship between sand grade and screen mesh size. Media filters protect emitters when using water with a high organic load from open water bodies or reclaimed water. The filtering media are 1.5 - 4 mm size basalt, gravel, crushed granite particles or fine silica sand. The accumulated dirt should be back flushed routinely in order to eliminate excessive head losses.

Sand filter is suitable for open water sources as primary filtering unit to filter algae and organic matter.

#### **5.10 Hydro Cyclone Filters/ Sand Separators:**

High loads of sand and other solid particles should be removed before reaching the main filtration unit. Centrifugal (vortex) sand separators remove sediment sand and other suspended particles heavier than water by the centrifugal force. The sand particles thrown against the container walls by the centrifugal force settle down and accumulate in a collecting chamber at the bottom. The collector is washed out manually or automatically.

Hydro Cyclone filters are used as primary filter for bore wells to separate sand of 300 to 100 micron particulars.

#### **5.11 Acidification**

Acidification of water is required when "hard" water containing a high concentration of bicarbonates is used for irrigation. The acid injected neutralizes the transient hardness and dissolves calcium carbonate precipitates. Acid can be applied with ordinary fertigation equipment or by a dedicated metering pump. The common acidifying agents are sulfuric, nitric, hydrochloric and phosphoric acids.

#### **5.12 Flushing**

To minimize sediment build up, regular flushing of drip irrigation pipelines is recommended. Valves large enough to allow sufficient velocity of flow should be installed at the ends of mains, submains, and manifolds. Also, allowances for flushing should be made at the ends of lateral lines. Begin the flushing procedure with the mains, then proceed to submains, manifolds, and finally to the laterals. Flushing should continue until clean water runs from the flushed line for at least two minutes. A regular maintenance program of inspection and flushing will help significantly in preventing emitter plugging. To avoid plugging problems during fertigation, it is best to flush all fertilizer from the lateral lines prior to shutting the irrigation system down.

#### **5.13 Fertigation**

The combined application of water and fertilizers through the irrigation system increases crop yields and minimize environmental pollution caused by excess fertilizer application. Diverse technologies are available for injecting fertilizer into the irrigation water. Fertigation equipment is mandate in BoQ of Drip System

#### **5.14 Fertilizer Tank**

Optional to the farmer. Over and above cost of ventury should be borne by farmer. A pressure differential is created by throttling the water flow in the control head and diverting a fraction of water through a tank containing the fertilizer solution. A gradient of

0.1-0.2 bar (1-2 m) is required to deflect an adequate stream of water through a 9-12 mm diameter connecting tube. The tank, made of corrosion resistant enamel-coated or galvanized cast iron, stainless steel or fiberglass, must with stand the network working pressure. The diverted water is mixed with soluble or liquid fertilizers.

Fertigation Tank is optional to orchard crops of below 1 Ha. Hence, it shall not be insisted, wherever the farmers have realized the importance of fertigation system, in such cases, fertigation tank of 30 liters is only to be supplied with Head Control System.

Wherever the area is more than 2 Ha, 60 liters fertigation tank can be supplied.

For the land holding between 1 and 2 Ha depending on the economic condition of the farmers, the size of the tank i.e., 30 or 60 liters can be provided. In case the farmer is not financially sound, 30 lit tank can be supplied for less than 1 ha and 60 lit for land holding between 1 to 2 ha.

#### 5.15 Ventury Injector

Suction of the fertilizer solution is created by water flowing through a constricted passageway (Ventury). The high flow velocity of water in the constriction reduces the pressure to below the atmospheric pressure, so that the fertilizer solution kept in an open tank / buckets is sucked into the constriction through a narrow diameter tube.

#### 5.16 Unit cost and formulas for working out of subsidy

**5.16.1** The crop wise spacing's and unit cost and formulas for calculating the eligible subsidy are enclosed in (Annexure-16&17).

**5.16.2** The technical specifications as per Bureau of Indian Standards (BIS) for various Micro irrigation components are enclosed in(Annexure-18).

#### 5.17 List of BIS Standards for Micro Irrigation

DHSOs / DHSCOs to ensure use of only BIS approved components of Micro irrigation systems installed under TGMIP component

<b>Sl. No</b>	<b>Component Description</b>	<b>BIS</b>
1	Polyethylene pipes for Irrigation - Laterals with amendment number 6	IS 12786 : 1989 (reaffirmed 2009)
2	Irrigation Equipment - Emitters - Specification	IS 13487 : 1992 (reaffirmed 2009)
3	Irrigation Equipment - Emitting pipes system - Specification (first revision)	IS 13488 : 2008 (reaffirmed 2009)
4	Irrigation Equipment - Strainer type filters specification (first revision)	IS 12785 : 1994 (reaffirmed 2011)
5	Irrigation equipment rotating sprinkler Part I, Design and Operational requirements (1 <sup>st</sup> revision)	IS 12232 (Par I) - 1996 (reaffirmed 2011)
6	Irrigation equipment rotating sprinkler Part 2, Test method for uniformity of distribution (1 <sup>st</sup> revision)	S 12232 (Part 2) - 1995 (reaffirmed 2011)

<b>Sl. No</b>	<b>Component Description</b>	<b>BIS</b>
7	Fertilizer and chemicals injection system part 1 Ventury Injector	IS 14483 (Part 1) 1997 (reaffirmed 2009)
8	Irrigation Equipment - Media Filters - Specification	IS 14606 : 1998 (reaffirmed 2009)
9	Irrigation Equipment - Hydro Cyclone filter - Specification	IS 14743 : 1999 (reaffirmed 2009)
10	Unplasticized PVC pipes for portable water supplies - Specification (third revision)	IS 4985 - 2000
11	Irrigation equipment - Sprinkler Pipe - Specifications Part-I Polyethylene pipe(first revision)	IS 14151 (part I) 1999 (reaffirmed 2009)
12	Irrigation equipment - Sprinkler pipes -Specifications Part II Quick coupled Poly	IS 14151 (Part II) 2008 (reaffirmed 2014)
13	High Density Polyethylene pipe for water supply - Specification (fourth revision)	IS 4984 : 1995 (reaffirmed 2002)

## **6. AFTER SALES SERVICES AND CAMPAIGNS**

Effective after sales service is the mandate of MI companies. The DHSOs / DHSCOs must ensure proper after sales services by the MI companies.

- 6.1** The MI Company should have network for providing after sales service in their areas of operation. Operation and Maintenance of the system, though simple, requires training for maintenance, fertigation, and acid treatment etc. in the initial stage. Therefore the MI Company, should provide detailed operational and maintenance manuals printed in Telugu language at the time of installation of the system to the beneficiaries. The beneficiaries should be advised to follow the instructions provided by the MI Company for the operation and maintenance of drip / Sprinkler irrigation systems.
- 6.2** Service Centers and MI Companies in the district should have facilities to provide technical guidance on agronomic practices, system maintenance schedules, supply of spare parts and ensure satisfactory performance of the system during the warranty period. List of service centers / offices with full addresses / telephone numbers / e-mail should be widely published and MI Companies must establish at least one service centre at each Revenue Division.
- 6.3** The Micro Irrigation Companies have to extend after sales services for a period of 10 years for the Micro Irrigation Systems installed under this programme. Free after sales service should be provided by the MI Company at least for 3 years. If any MI Company fails to provide such free service, the same should be brought to the notice of DHSOs / DHSCOs (NMMI Guidelines).
- 6.4** Staff deployment by the MI Companies:

DHSOs / DHSCOs to ensure that the required staff, as mentioned below are deployed by the MI Company in the district.

### 1. District Team:

One District Coordinator, one or more MI Engineers depending upon the work load is mandatory. Agronomist/Horticulturist should be appointed as a part of District Team to assess the feasibility of Micro Irrigation in the farmer's field basing on the conditions of Soil, Water & Crop. Moreover the team should train the farmers in all aspects of management of water, nutrients and Soil in addition to the MI System maintenance. Hence the presence of an Agriculture or Horticulture Graduate in the district team is non-negotiable.

### 2. Mandal Team:

One Mandal or Field Coordinator for every 100 ha of target given. One Mandal or Field Coordinator for every 100 ha of area covered by the MI Company.

**6.5** In addition to the routine services rendered by the companies each MI company should also conduct Service Campaigns @ 8 by big companies (>5000 ha at state level) and 5 by small companies (<5000 ha at state level) per month or the required number as decided depending upon the acreage covered by the company.

In addition to the routine services rendered by the companies each MI company should also conduct Service Campaigns @ 5 by big companies (>5000 ha at state level) and 5 by small companies (<5000 ha at state level) per month or the required number as decided depending upon the acreage covered by the company.

**6.6** The campaigns should cover all beneficiaries who were sanctioned Microirrigation systems by that company in a financial year.

**6.7** The campaign should cover the aspects of maintenance of MI Systems, Fertigation, Acid treatment etc.

**6.8** In order to ensure proper after sales service, each MI Company should constitute separate teams comprising technical people for rendering service.

**6.9** Service campaigns should be conducted by the MI Company in Remote potential areas also.

**6.10** The DHSOs / DHSCOs should prepare month wise schedule of campaigns well in advance and should see that MIE / DHSOs / DHSCOs should attend the campaign along with MLHSCO concerned.

**6.11** Documentation should be done by each company and submit to DHSOs / DHSCOs office in every month.

**6.12** DHSOs / DHSCOs to report on after sale service campaigns in the prescribed proforma by 5th of every month to Pos office.

**6.13** Feedback Questionnaires in a post card along with reply card to be posted to each individual MI beneficiary for their feedback & response to assess impact of MI System on their crop yield.

**6.14** The ICT (Information Communication Technology) enabled tracking system (PARISHKARAM) available at the Collectorate may be utilized for direct interaction with the farmers for promotion of micro irrigation, redressal of grievances and for timely installations.



## 7. QUALITY TESTING OF MICOMPONENTS

- 7.1** The DHSOs / DHSCOs should send the samples of MI Components to the CIPET, Hyderabad once in a financial year covering all companies, all mandals to have representative samples of all the installations in the district.
- 7.2** Collection of samples with batch number is mandatory. The samples should be collected from godowns of MI companies and from the beneficiaries fields before installation of the systems.
- 7.3** During the collection of samples, panchanama should be done. Statement from beneficiary should be recorded duly signed by the collecting officer.
- 7.4** After collection of samples, they should be coded for security purpose.
- 7.5** For analysis, the samples are to be sent to the following address:

CENTRAL INSTITUTE OF PLASTICS ENGINEERING & TECHNOLOGY

IDA - Phase - II, Cherlapally, Hyderabad - 500 051

Phone No:+91-40-27264040

Mobile No.: +91-9959333415.

Fax No.: +91-40-27264051

E-Mail: hyderabad[at]cipet[dot]gov[dot]in /

cipethyderabad[at]yahoo[dot]co[dot]in

- 7.6** The charge for testing of samples as per the agreement entered with CIPET by MIP are given below:

Sl. No	Test on MI Components	Test Charges per Sample (Ser. Taxes extra)
1	All tests as per IS:12786-1994 - Irrigation Laterals	3525.00
2	All tests as per IS:13487-1992- Irrigation equipment	2300.00
3	All tests as per IS:13488-1992- Irrigation Equipment Emitting Pipe Systems	5175.00
4	All tests as per IS:14151 (Pl.2)-2008 - Sprinkler Pipe - Quick Coupled PE Pipes	15680.00
5	All tests as per IS:4985-2000 - UPVC Pipe (with Socket end)	4125.00
6	All tests as per IS : 4984-1995-HDPE Pipes	5400.00
7	All tests as per IS:12232 (PL.I) - 1996 -Rotating Sprinklers	9000.00
8	All tests as per IS: 12785 - 1994 -Irrigation Equipment - Strainer - Type Filters	5025.00

**7.7** The quantity of material required for conducting the test is as detailed below:

Sl. No	Tests	Test samples required
Laterals as per IS:12786 & Emitting Pipes as per IS:		
13488		
1	Identification & composition analysis	
2	Thickness	15mtrs
3	Pressure Test	
4	Dimensions	
HDPE Pipes IS: 4984 & IS: 14151 (Pt.2)		
1	Identification & composition analysis	
2	Thickness	1 mts
3	Pressure Test	
4	Dimensions	
UPVC Pipes IS: 4985		
1	Identification & composition analysis	
2	Thickness	1 mts
3	Pressure Test	
4	Dimensions	
Emitters /drippers as per IS : 13487		
1	Identification & composition analysis	25 Nos
2	Flow Rate	

**7.8** If any material does not conform to the quality parameters of BIS norms, necessary action to be initiated by the DDH/DHSO to replace the entire batch of the material by concerned company and necessary penalties have to be levied. The details of the test, not conforming to the standards to bring to the notice of PO office for notifying to other affected districts.

**7.9** Quality Testing of MI Companies:

Targets for analysis of MI components samples, if the target of the District is less than 1000 Ha, 3no.s of samples covering atleast 1 sample for each MI Company have to be analyzed. For the Districts where the target is more than 1000 ha., 3no.s of samples per each additional 1000 ha., of target have to be analyzed covering all the MI companies depending on the target.

**7.10** The expenditure towards the testing charges shall be met from the Administrative charges.

## **8. TRAINING PROGRAMMES**

Human Resources Development through training programmes for officials, beneficiaries, entrepreneurs and other active players involved in micro irrigation is an important element of the scheme. These training programmes will be coordinated by the Deputy Director of Horticulture / Project Director, TGMIP and will be organized through PFDCs, SAUs, ICAR Institutes etc., involving MI companies including exposure visits in respect of equipment and accessories required for micro irrigation system.

- 8.1** Field visit to beneficiaries may be organized to the nearest field for demonstrating the Fertigation technique, Acid treatment and maintenance of the system.
- 8.2** 2 Nos. of One day Training Programmes should be organized every month in each CLHSOs jurisdiction by utilizing the budget allocated for training programme in each district and integrating with MIDH, RKVY, ATMA, RAD Banks & Voluntary organizations.
- 8.3** Trainings should be conducted by involving MI Companies under service campaigns.
- 8.4** Detailed guidelines on conduct of trainings will be issued separately.
- 8.5** Resource persons:
  - Progressive farmer
  - MI Company Agronomist /Technicians.
  - Agri. /Horti University Scientist.
  - TGMIP Officials.
- 8.6** Contents of training programme:
  - System operation & maintenance.
  - Fertigation.
  - Irrigation scheduling
  - TGMIP guidelines.
  - Crop management aspects.
  - After Sales Services
  - Software innovations
- 8.7** Documentation:

Documentation of training programme should be done with photos.
- 8.8** Preparation of study material:

Study material including the agronomic practices of the major crops in the District, Fertigation schedules and water requirement of crops to be prepared in consultation with the scientists.

The DHSOs / DHSCOs are requested to organize the training programmes as per the target allotted to the districts.

## 9. Penalties for Violation of responsibilities by MI Supplier:

TGMIP is a unique Project involving the participation of not only several MI Companies and also thousands of beneficiaries spread all over the state. Since the Project is gigantic in nature involving a series of activities the following system of penalties have been devised to reduce violations in project implementation. The District Collectors & Chairman, DMC/ TGMIP are competent to take action against the MI companies for violations of terms and conditions. As and when the violations by the MI companies are brought to notice all such violations shall be looked into personally by the District Horticulture & Sericulture Officer. **If proper design is not prepared as per the discharge of borewell/ well / pump and if excess material / short materialis delivered, all the payments are to be with held for particular field.**

In the case of violations / irregularities in the implementation of MI programme noticed by the Addl. Director / Joint Director / Dy. Director / Asst, Director of Horticulture, OSDs of TGMIP, during their field visits, the Director of Horticulture is competent to take action against the MI Companies for the violation of Terms and conditions, based on the reports.

In the case of irregularities noticed by the Vigilance & Enforcement Department, ACB etc., and communicated to the Department for follow up action, the Director of Horticulture is competent to take action against the MI Companies on such reports for violations.

In the case of 3rd Party Verification Reports on the deviations / irregularities noticed in the implementation of MI Programme, the Director of Horticulture is competent to take action against the MI Companies on such reports.

**A due process shall be followed and the MI companies shall be heard before taking a final action.**

### VIOLATION NO. 1:

**Not positioning sufficient staff as prescribed.**

**PENALTY:** Penalty of amount equal to the cumulative amount of the salary of the said post vacant due to absence of employee **after a period of two months from the date of absence / vacancy.**

**VIOLATION NO. 2:**

***Delays in execution of assigned work - Review of work once in a month***

- (a) Failure to complete installation of 80% of the total sanctioned (work order issued) units within the stipulated time in two successive months in each district .**

***PENALTY:*** *Rs. 20,000/- per District.*

- (b) Failure to complete 80% of the total sanctioned (work order issued) units within the stipulated time for three successive months in each district.**

***PENALTY:*** *: Review by District Collector and cancellation of sanctioned area of the non performing MI Supplier area and reallocation of this area to other MI Companies in the Project in the District as opted by the farmer in his application and impose penalty of **Rs.50,000/-**per District.*

**VIOLATION NO. 3:**

**Delays in submission of bills / Invoices and wrong claims**

- (a) Failure to submit the hard copies of bills / invoice within 15 working days of completion of installation and after uploading of Completion Certificate and Final Invoice.**

***PENALTY:*** *A cut of 5% of the cost of system for every **15 days** delay.*

- (b) Uploading of Completion Certificate and submission of bills without installations in the field**

- (c) Uploading of Completion Certificate, submission of bills without installations, but material dumped and**

- (d) Uploading of Completion Certificate, submission of bills with incomplete or partial installations or trench not closed, mains and sub-mains are not buried, improper installations.**

***PENALTY: For b, c & d, Penalty of Rs.10,000/- for each such case.***

**(e) Uploading of Completion Certificate, submission of bills for those installations found on the fields of un-connected / different farmers field.**

***PENALTY: A penalty of the double the amount of the cost of system, recovering the subsidy amount if already paid and A fine of Rs.2,00,000/ for each such case.***

**(f) Without the embossing of "Made for TGMIP"**

***PENALTY- A penalty of Rs. 10,000/ for every such case***

**(g) Uploading** of completion certificate by MI Supplier without using laterals produced by their own company (own manufactured) / use of old material / Use of material without ISI.

***PENALTY: De-listing the company for a period of one year or more as decided by SLSC and A fine of Rs.2,00,000/- for each such case.***

**VIOLATION NO. 4:**

**Irrigation system design, installation & Bill of quantities of each installation district wise (for the sanctions and completed works)**

**(a) Improper benchmark survey**

***PENALTY:*** Correction of bench-mark survey report at MI Supplier Cost and a penalty of Rs.**Rs.2,000/-**-per installation

**(b) Improper Micro Irrigation installation which is not as per approved design & system components affecting the functioning the system.**

***PENALTY:*** Correction of improper micro irrigation installation system at Supplier cost and a penalty of **Rs.5,000/-** per installation.

**(c) Wrong communication with regard to status of implementation (deviation from Monitoring system software guidelines)**

***PENALTY:***

***First time*** .-Warning and immediate correction of the same

***Second time:***Rs.2000/-for each wrong intimation in a particular month.

**VIOLATION NO. 5:**

**(a) Quoting higher price than pre-approved**

**rates *PENALTY:***

*First time* : Rs. 20,000/- per BOQ invoice *Second time:* A penalty of Rs 50,000/ and Cancellation and reallocation of target to other best performing MI companies

**VIOLATION NO. 6:**

**(a) Quality control & Quality assurance**

- i. Use of spurious/recycled raw material (deviation from specified technical specifications)**
- ii. Deviations from prescribed standards in the agreement**
- iii. Use of low grade/class products in comparison to specified standards**
- iv. Use of certain components of brands which are not approved by MIP**

***PENALTY:***

*First time* :A penalty equal to the cost of component supplied and replacement of the component at suppliers cost

*Second time* :Cancellation of works sanctioned in the concerned district with a penalty of double the cost of component.

*Third time* :De-listing/black the company for a period of one year or more as decided by SLSC., reallocation of the area to other MI companies opted by the farmer (2<sup>nd</sup> option) and forfeiting the bank guarantee of Rs. 30 lakhs.

**VIOLATION NO.7: Quality Control:**

**In case of violations in respect of failure in quality control & quality assurance following penalties shall be imposed:**

- First time in a year, a warning letter may be issued to the manufacturer instructing to rectify the shortcoming immediately.
- Second time in same year, a warning letter may be issued to the manufacturer instructing to rectify the shortcoming immediately with a penalty of 10% of invoice value.



- Third time in same year, a penalty of 25% of invoice value may be charged.
- Fourth time in same year, a show cause notice may be issued to the company and the case may be refer to SLSC for de-listing the company for a period of one year or more as decided by SLSC.

#### **VIOLATION NO. 8:**

##### **Maintenance &After sales Services- Review every 3 months**

**(a) The after sales services include Supply of drip/sprinkler Operation & Maintenance manual, Practical demo of system operation including fertigation, filtration and valves, Acid treatment, Chlorination, Supply of spare parts etc.**

***PENALTY:***

*Failure to deliver services (Not satisfactory) -*

***Penalty of Rs. 2,000/- per every default***

*Failure to deliver services (Not satisfactory) for second time -*

***Penalty of Rs.4,000/- per every default***

*Failure to deliver services (Not satisfactory) for third time -*

***Penalty of Rs 10,000/- per every default***

#### **VIOLATION NO. 9:**

##### **Wrongful submission of Farmer Affidavit:**

In case of sale of the MI system by the beneficiary to other farmers before expiry of average life of the system, for which subsidy has been claimed by the beneficiary, legal proceedings against the beneficiary as per applicable law may be initiated and the beneficiary may be blacklisted from availing any government assistance in future. **In such cases where the farmers affidavit is submitted by the MI Company is not accepted as his own by the beneficiary in such cases the MI Company is liable to pay the penalty amount as prescribed in the Affidavit. (Annexure- 16)**

**The affidavit has to be attested by the HEO concerned. If any forging of signature of farmer or Officer or the photos, is noticed, criminal case will be filed against the MI Company.**

The list of violations mentioned above is not exhaustive and any other deviations, which affect the implementation of the project adversely, can be considered by the District Collectors, as deemed fit.

## **10. ACCOUNTING PROCEDURE FOR TGMIP**

### **INTRODUCTION**

The procedure of accounting approved by Comptroller and Auditor General of India (C&AG) is adopted in TGMIP also.

The following procedure is prescribed to all the districts in the maintenance of accounts & Audit for the year 2014-15. The earlier practice may be adhered to in respect of payments related to previous years (upto2013-14).

A fund account is being maintained at Andhra Bank, Khairatabad Branch, Hyderabad. All the funds i.e., Central assistance, Matching State Share, MGNREGS, RKVY Oilpalm and IJP are placed in the above account. All payments will be made to MI Companies through CFMS mode by TGMIP Head Office.

- 10.1** The accounts should be maintained on commercial principles i.e., double entry book keeping system
- 10.2** The DHSOs / DHSCOs should maintain monthly/annually inter-alia the following
  - a) Receipt and Payment Account
  - b) Income & Expenditure Account
  - c) Balance Sheet
- 10.3** There should be an audit by a chartered accountant (C.A) which is mandatory and C.A should be appointed by the Collector /chairman. Same C.A cannot be more than (3) years continuously. The audited utilization certificate in GFR 12C is to be signed by C.A, Deputy Director of Horticulture / Project Director and Collector / Chairman and sent to Head office. The audit fees to be paid as per the rates communicated by Head office.
- 10.4** Test audit by Accountant General (A.G) is also conducted and the DHSOs / DHSCOs should provide all the relevant records to the audit team.
- 10.5** Cash books and subsidiary registers/ledgers should be maintained in the uniform formats prescribed.
- 10.6** Specific time limits are prescribed for compilation and submission of annual accounts. The annual accounts are to be compiled by 30th April and got audited by the C.A as per the rules, on or before 31stMay. A copy of such audit report duly certified by the auditor and signed by the DDH/DHSO and collector/Chairman of the district shall be forwarded to the P.O, TGMIP not later than 30th June.
- 10.7** The powers of P.Ds/DHSOs for signing cheques have been retained at Rs.1.00 lakh. Without splitting up any bill.
- 10.8** An imprest amount of Rs.5000/- is allotted from the administrative charges for meeting the day to day expenditure and should be maintained by a regular employee.

- 10.9** Only (1) Bank Account in Andhra Bank shall be maintained for administrative charges (CSS +State).
- 10.10** Only one cash book i.e., for Administrative charges is to be maintained.
- 10.11** The Deputy Director of Horticulture/ DHSO shall acknowledge receipt of funds from the MIP Head Office in the format prescribed immediately after the receipt of funds. (Annexure-19)
- 10.12** Interest earned on funds of the Administrative charges should be reported to Head Office on annual basis in the 1st week of April for the preceding financial year and register of interest earned should be maintained in the format prescribed. (Annexure-22)
- 10.13** The DHSOs / DHSCOs should maintain a register of permanent/semi-permanent assets or partially acquired out of Project funds (Annexure-23).
- 10.14** Maintenance of Cash Book
- 10.15.1** The DHSOs / DHSCOs should maintain one separate cash book for administrative charges and other for scheme funds (subsidy). The cash books shall be maintained in the prescribed format in double entry system on commercial principles (Annexure-20).
- 10.15.2** The cash book shall be closed on every transaction day. All receipts and payments should regularly be posted in the cash book. After completion of month, the cashbook should be closed and signed by the Accountant and the DHSOs / DHSCOs.
- 10.15.3** Interest accrued on the account should also be reflected in the cash book.
- 10.15.4** The monthly closing balance should have the details of Bank balances supported by the copies of Bank statements. A certificate in this regard should be recorded in the end of every month.
- 10.15.5** The debits and credits for Bank charges, commission or interest, which may appear in the monthly Bank statement should be incorporated in the cash book forth with, so that cash book balances tally with the Bank Balance.
- 10.16** Guidelines for payment
- 10.16.1** All payments pertaining to Administrative charges shall be made through cheques only supported by documents such as bills/receipts and cash memos, while obtaining proper acknowledgement.
- 10.16.2** All paid vouchers shall have to be retained for a period of 7 years or till completion of the statutory audit whichever is earlier
- 10.16.3** A system of debit voucher for each payment shall be introduced. The debit voucher shall indicate sanction no., particulars of expenditure, ledger head/sub head under which it is to be classified. The debit voucher shall have to be

approved by the DHSOs / DHSCOs and the same will be the basis for posting the cash book and ledgers.

**10.16.4** Wherever payments are made in respect of bills there should be stamping on such bills/ receipts, indicating paid and cancelled, so that no double payment can be claimed or made.

#### **10.17** Procedure for Bank Reconciliation

**10.17.1** The Bank account should be reconciled on the last day of the every month. If there is any discrepancy that should be rectified immediately. The Bank Reconciliation Statement (BRS) should be pasted in the cash book at the end of each month. The BRS should be prepared as per format (Annexure-22).

**10.17.2** Cheques older than (3) months from the date of its issue and not presented to the Bank should be investigated by the DHSOs / DHSCOs and expenditure entry should be written back in cash book and accounts noting the reference No., date of payment, voucher and head of account.

#### **10.18** Coordinated functions of Banks with MIP

**10.18.1** Funds received from MIP Head Office should be kept in a savings Bank account only and in no case be kept in fixed/term deposits.

**10.18.2** On receipt of intimation from the Bank about the receipt of funds through RTGS/NEFT the DHSOs/ DHSCOs shall immediately send the passbook to Bank for making necessary entries.

**10.18.3** Interest earned on the funds is to be added to the account and necessary receipt entries be made in the cashbook.

#### **10.19** Guidelines for cheque book

**10.19.1** On receipt of cheque Book from the Bank, the Accountant shall count cheque leaves and certify on back side of the cheque book that "this cheque Book contains forms". The cheque books shall also be entered in the register meant for the purpose and kept in the custody of Accountant.

**10.19.2** No cheque shall be signed unless required for immediate delivery to the person to whom money is due.

**10.19.3** If a signed cheque could not be delivered to the payee on account of non appearance, it should be lodged in an iron safe and the key of which should be kept in the custody of accountant.

**10.19.4** In case of cheque lost, on receipt of intimation from the payee the drawee Bank should be asked to provide " Nonpayment certificate". The payee should be insisted

upon to execute an indemnity bond for an amount equal to the value of cheque lost and a fresh cheque can be drawn then only in favour of the payee.

**10.19.5** In case of time barred cheques, revalidation of cheques shall not be resorted to.

The time barred cheque should not be destroyed but preserved as a voucher/sub voucher and a fresh cheque should be issued on this basis. The word "VOID" should be written on the overleaf of the cancelled cheque to avoid its misuse at a later date.

**10.19.6** Every payment by cheque shall be covered by a stamped receipt if necessary signed by the person to whom the money is due and actually paid.

**10.19.7** All amounts received through cheques/drafts will be acknowledged through printed receipts which will be signed by the drawing and disbursing officer or any other person authorized on his behalf. The receipt books and their counterfoils will be machine numbered and their record be kept in the receipts register.

**10.19.8** Counterfoils/Record slips of cheques should bear the name of the payee, date of issue, voucher number and initial of signatories.

**10.19.9** All cheques other than self cheque should be crossed / account payee and in no case a bearer cheque should be issued.

**10.20** Guidelines for auditing the accounts of MIP

**10.20.1** The C & AG/ internal audit shall have the right of auditing of the accounts of MIP and shall have the access to the books and other relevant records.

**10.20.2** This being a Centrally Sponsored Scheme (CSS) implemented through MIP, is subject to internal audit by the Ministry of Agriculture, Govt. of India and State Govt. Teams.

**10.20.3** A copy of such Audit report duly signed by the auditor, DDH/PD and Collector & Chairman should forwarded to the POs office by 31<sup>st</sup> May.

**10.20.4** NMSA being a centrally sponsored scheme implemented through TGMIP is subject to internal audit by the Ministry of Agriculture, Govt., of India and State Government schemes.

**10.21** Guidelines for selection of CA firms

**10.21.1** Preference should be given to select experienced CA listed in the panel of AG of the state or C & AG. However in areas where empanelled CAs are not available any other CA with professional qualifications prescribed by the respective State Governments from time to time may be trusted.

**10.21.2** If any professional misconduct found on the part of CA shall be reported to the Institute of Chartered Accountants of India. CA is liable for any punitive action to

be taken by the Institute under the Code of Conduct as defined under provisions contained in the Chartered Accountant Act,1949.

**10.22** List of Monthly Statements to be prepared by DHSOs/ DHSCOs

The DHSOs /DHSCOs shall prepare following monthly statements for each scheme.

- i. Preparation of Bank reconciliation statement.
- ii. Monthly/Fortnightly review of Bank passbooks.
- iii. Monthly closing of pass book having "Summary statement of transactions".
- iv. Monthly closing of receipt and payment register.
- v. Summary of cheques issued but not presented at Bank during the month.
- vi. Monthly Receipts and Payments for Administrative expenses (Head wise).

**10.23** Summary of Account books to be maintained by the DDH/PD

- a. Cashbook
- b. Register for States hare
- c. Register for Central share
- d. Register for Beneficiary contribution
- e. Register for RKVY Funds
- f. Register for IJP Funds
- g. Register for NREGS Funds
- h. Cheque issue register
- i. Register of cheque books
- j. Register of cheques/ Demand draft received
- k. Register of advances to staff'
- l. Register of Interest accrued on funds
- m. Register of Admn charges: to record the cheques issued against the balances in Andhra bank and to arrive at the actual balance available from time to time.
- n. Register of remittances of Regular employees in respect of GPF, GIS, APGLIF, PT, income tax, Govt loans, FA etc.,
- o. Register to record recovery and remittance of Outsourcing employees in respect of (1) Employees Provident fund contributions (2) ESI loans (3)PT
- p. Registers to watch the disposal of audit objections of AG's inspection/ internal audit/ CA audit
- q. Assets register in form G.F.R19.
- r. Bank reconciliation register for reconciliation of balances held in Andhra Bank.
- s. Register of invoices for payment of 90%subsidy

- t. Deposit register to be maintained for Earnest Money, security deposit of employees and income tax deductions.
- u. Scheme wise ledgers.
- v. Any other register considered necessary connected with maintenance of accounts.

**10.24** Monthly Receipt & Payments for Administrative charges.

The DHSOs/ DHSCOs are required to submit Receipt & Payment Account in respect of Administrative charges in the format already communicated in the Memo No. MIP/383-B/87/A3Dt:20.05.2013 by 4<sup>th</sup> of succeeding month.

**10.25** Adoption of Receipts & Payments statements communicated by head office for CA audit reports.

Since different formats of Receipt & Payment Accounts are adopted by the C.As, the DHSOs / DHSCOs are to advise the CA's to prepare the R & P Account in the formats designed at Annexure No. 26. The C.As may also specifically be advised to prepare separate audit reports for (i).Scheme (ii). Administration Expenditure -Annexure-26 as already communicated in Memos cited above.

## **11. DUTIES AND RESPONSIBILITIES OF OFFICERS, STAFF & MICOMPANIES IN TGMIP**

### **11.1 Duties and responsibilities of DHSOs/ DHSCOs**

- 11.1.1** Ensure achievement of physical and financial targets duly following crop wise targets as allotted by the Project.
- 11.1.2** Ensure convergence with the line departments like DWMA, SC & ST agencies etc to cover required area under SC/ST/BC and SF/MF and maintain the percentages of SCSP 16.05%, TSP9.55% and BC not less than 25%, Women 33% and not more than 10% budget of other farmers (2-5ha) proportionate coverage of area between Inline and Online Drip.
- 11.1.3** Ensure online registration of all eligible Beneficiaries.
- 11.1.4** Ensure entering applications of Beneficiaries in Master Register as per seniority.
- 11.1.5** Ensure online process flow as per the logins.
- 11.1.6** Sanction of administrative sanctions through online for release of 10% subsidy.
- 11.1.7** Ensure to follow the time schedules prescribed to issue administrative sanctions, trench cutting, final inspections, 90% payments etc.
- 11.1.8** Ensure to conduct prescribed Random inspections by DHSOs/DHSCOs, MIEs etc., after receipt of final inspection reports from CLSHO.
- 11.1.9** Conduct review meetings with DCOs of MI Companies and CLSHOs and other staff on weekly basis & monitor the progress of MI installations.
- 11.1.10** Ensure positioning of staff by the M.I. Companies as per MIP norms.
- 11.1.11** Ensure for conduct of after sales service campaigns by companies as per MIP norms.
- 11.1.12** Ensure timely replies on the reports being called for by the Commissioner of Horticulture and Project Officer.
- 11.1.13** Impose penalties on MI Companies for violations with the approval of District Collector/ DOH after giving reasonable opportunity.
- 11.1.14** DHSOs / DHSCOs should monitor collection of samples of MI Components of all MI companies and obtain results from CIPET. In case of spurious supply the report should be submitted to the Head office.
- 11.1.15** Conduct 50% random inspections of MI Installations by covering all the mandals and all the MI Companies as per allotment.
- 11.1.16** Act as drawing & disbursing officer for TSMI at district level.



- 11.1.17** Submission of monthly receipts and expenditure statements and ensure incurring expenditure in accordance with the allocation and monthly progress report by 2nd every month..
- 11.1.18** Submission of Utilization Certificates to the Project Officer.
- 11.1.19** Ensure periodical checking of all the registers and records.
- 11.1.20** To follow proper accounting procedures.
- 11.1.21** Random inspections should be completed within 10 days after completion of final inspection.
- 11.1.22** Attend all other duties entrusted by superior officers/ District Collector / Project Officer / Commissioner of Horticulture.
- 11.1.23** Any deviation noticed in the implementation of the scheme involving the loss to the Government as well as to the beneficiary, will attract the disciplinary action.
- 11.2** Duties and responsibilities of CLHSO
  - 11.2.1** Maintaining a Seniority Register of applications received from DHSOs / DHSCOs office for preliminary inspection.
  - 11.2.2** Conduct of 100% Preliminary inspection of the applications allotted by the DHSOs / DHSCOs as per seniority and collect the hard copies of required documents from the farmer and submit to the DHSO.
  - 11.2.3** Verify the contents of BOQs, Designs, invoices as per norms and guidelines of MIP,
  - 11.2.4** Ensure the unit cost and the quantities specified in BOQ are as per the approved MIP spacing and norms. Coordinate with MI Companies for installation of MI Systems.
  - 11.2.5** Ensure recording of GPS Coordinates in preliminary inspection reports.
  - 11.2.6** Ensure the beneficiary takes up the trench work and update data online.
  - 11.2.7** Coordinate with MI Companies for installations of MI System.
  - 11.2.8** Conduct of 100% final inspections with Digital Photographs with date as per guidelines according to seniority and allotment made by DHSOs /DHSCOs.
  - 11.2.9** Coordinate with the officers for conduct of Random Inspections.
    - 11.2.9.1 Educate the beneficiaries where Micro irrigation system is installed at frequent intervals on fertigation schedule, Pest management, adoption of new varieties and new cropping system under drip/semi permanent sprinkler etc. systems.
    - 11.2.9.2 Coordinate with MI companies with regard to after sales service for a period of 10 years from the date of installation.

- 11.2.10** To interact and co-ordinate with the staff of other line departments with regard to TGMIP activities .
- 11.2.11** To maintain tour diary and submit the same with full details to DHSOs /DHSCOs, TGMIP.
- 11.2.12** Ensure eligibility of the beneficiary duly verifying the required documents attached to the application before sanction of 10% Administrative sanction & 90% final payment.
- 11.2.13** Maintain progress reports on MI Installations, Crop wise, Online & inline wise according to the targets.
- 11.2.14** Assist the DHSOs / DHSCOs in overall implementation of project i.e. in achieving the physical & financial, inline / online ratios, SC, ST, BC and Women etc., as per targets.
- 11.2.15** Monitor the trench cutting status of the sanctioned applications.
- 11.2.16** Ensure for preparation of all reports called for by Head Office / District Collector.
- 11.2.17** Attending to the rectification reports of 3rdpartyevaluation.
- 11.2.18** Supervise the work ofOffice.
- 11.2.19** Ensure maintaining the seniority in Master Registers for both 10% and 90%payments.
- 11.2.20** Conduct 100% inspections of MI Installations by covering all the mandals and all the MI Companies as per allotment.
- 11.2.21** Ensure to circulate all MI files (10% & 90%), Registers, Records, Cash Book, Ledgers etc., as per MIP norms after verification to DHSOs / DHSCOs in time for approval.
- 11.2.22** Attend the meetings as directed by the DHSOs /DHSCOs.
- 11.2.23** Attend all other duties entrusted by superior officers from time to time.
- 11.2.24** Random inspections should completed within 10 days after completion of final inspection.
- 11.2.25** CLHSOs/DHSO should ensure that the farmer has not availed subsidy under the scheme during the last 7 years for the same land for applications received before issue of 10% Mobilization sanction.
- 11.2.26** Any deviation noticed in the implementation of the scheme involving the loss to the Government as well as to the beneficiary, will attract the disciplinary action.
- 11.3** Duties and responsibilities of Superintendent, TGMIP
- 11.3.1** Ensure the staff to attend office in time and submit attendance Particulars to the DHSOs / DHSCOs everyday.

- 11.3.2** Maintenance of all registers and records as required as per TGMIP guidelines.
  - 11.3.3** Ensure prompt submission of files and reports.
  - 11.3.4** Ensure proper maintenance of Master registers as per seniority for the applications received for sanction of 10% administrative sanctions and for payment of 90% subsidy.
  - 11.3.5** Ensure maintaining of Personal Register(PR)s.
  - 11.3.6** Maintain beneficiary wise individual files(village wise and mandal wise).
  - 11.3.7** Supervise the work of the staff of the office.
  - 11.3.8** Submission of files for release of 10% and 90% payments after verification.
  - 11.3.9** Ensure timely action on RTI Applications.
  - 11.3.10** Follow-up action on all Audit related files.
  - 11.3.11** Ensure submission of Cash Book by Accountant daily to the P.D. and ensure bank reconciliation at the end of the every month.
  - 11.3.12** Ensure remittance of 10% beneficiary contribution to the beneficiary contribution account of the DHSOs / DHSCOs office on daily basis. Further the excess amount collected, if any from the beneficiaries may be refunded to concerned beneficiaries as per norms.
  - 11.3.13** Attend to Farmer and MI company grievances.
  - 11.3.14** Attend all other duties entrusted by superior officers from time to time.
  - 11.3.15** Data base of the farmer has to be verified while processing the application that the farmer has not availed subsidy under the scheme for a period of 7 years for the same land, even within the subsidy limit.
  - 11.3.16** Any deviation noticed in the implementation of the scheme involving the loss to the Government as well as to the beneficiary, will attract the disciplinary action.
- 11.4** Duties and responsibilities of MIEs
- 11.4.1** Collection of applications of beneficiaries and also ensure the crop suitable as per target through MLHSCOs
  - 11.4.2** Scrutinize the farmer's applications and verify BMS report, the BOQ values system cost, subsidy arrived at etc., as per the MIP norms & guidelines and ensure recording of GPS Coordinates and arrive at area in BMS are tallied Coordinates of final inspection.
  - 11.4.3** Scrutiny the BOQs, Designs, invoices as per norms and guidelines of MIP and ensure the availability of fertigation equipment in the BoQ.
  - 11.4.4** Verify the unit costs and quantities are as per the MIP approved spacing and unit cost.

- 11.4.5** DHSOs / DHSCOs in matters related to Unit Costs, calculations, BOQs verifications, Online related issues etc.,
- 11.4.6** Responsible for thorough technical scrutiny of the 10% and 90% MI files submitted by the MI Companies.
- 11.4.7** Conduct Random verification of 100% installations before making 90% payments as per allotment.
- 11.4.8** Coordinate with DWMA and other agencies for covering more area under IJP/EGS and SC/ST.
- 11.4.9** Responsible for collection of MI component samples from the field and sending for analysis to CIPET.
- 11.4.10** Random inspections should be completed within 10 days after completion of installation.
- 11.4.11** Responsible for preparation of after sales service campaigns in coordination with MI Companies and CLHSOs and ensure to organize them as per the schedule and for organization of farmer's training programme.
- 11.4.12** Attend all other duties entrusted by superior officers from time to time.
- 11.4.13** The MIE responsible for any financial loss or any other irregularities committed is liable for Criminal Action.
- 11.5** Responsibility of MI Companies:
- 11.5.1** The mandatory coverage of SC, ST & BC beneficiaries SC, ST Act 16.05% and 9.55% funds are to be targeted for SC & ST farmers respectively under SC sub - plan and Tribal sub - plan and at least 25% funds for Backward Class farmers respectively is to be taken up by the MI company and Not exceeding 10% of financial target shall be covered by other farmers (2-5ha).
- 11.5.2** The MI company should achieve Inline and Online crop targets in the ratio of 80:20.
- 11.5.3** Survey of beneficiary's land with GPS including the collection of data on land holding, crops grown / to be grown, water source and yield, land topography etc & must ensure land suitability, functional water source, energization by visiting farmers fields and should submit applications of such suitable applications only to DHSOs / DHSCOs office for 10% sanctions.
- 11.5.4** Appropriate MI system to be designed based on the water requirement of proposed crop.
- 11.5.5** The MI company is responsible to login and complete the required process for sanction of 10% and 90% payments.

- 11.5.6** Marking has to be given by the MI Company within 7 days after receipt of administrative sanction.
- 11.5.7** The MI Company should coordinate and motivate the Beneficiary to open trench as per the marking given by the MI Company and as per the recommendations of the MI company representative (Trench size) within 7 days after marking given by the MI Company.
- 11.5.8** MI company has to submit photographs of preliminary inspection, Final inspection and at the time of installation as per guidelines
- 11.5.9** Trail run has to be given to farmer after completion of MI Installation.
- 11.5.10** The MI company should demonstrate the usage of ventury/ Fertigation tank and maintenance of system.
- 11.5.11** Warranty certificate to be issued by the MI company to farmer for a period of 5 years.
- 11.5.12** After sale campaigns to be organized as per the target allotted and should give acid treatments, fertigation & irrigation schedule etc., at interval of 6 months
- 11.5.13** To co-ordinate with DHSOs / DHSCOs in quality testing of MI components in CIPET fertigation for 6months.
- 11.5.14** To provide technical guidance to farmer in maintenance of MI system.
- 11.5.15** The MI Company should give the address particulars of contact person and also the place of availability of spare parts and at least one at every Division Head Quarters.
- 11.5.16** The design should be in accordance with the crop and water availability.
- 11.5.17** The DCOs & MIEs of MI company should tour intensively in the District and to verify the details of BMS report given by the Mandal representative.
- 11.5.18** BMS, Design, BOQ to be submitted by the MI company within 7 days for sanction of 10% Mobilization advance.
- 11.5.19** MI company has to submit original invoice, Completion and warranty certificate duly signed by the farmer within 7 days after installation for release of 90% Final payment.
- 11.5.20** MI company should install the MI system within 15 days after trenching by the farmer.
- 11.5.21** The MI company should submit BOQ and Invoice in DHSOs / DHSCOs office.
- 11.5.22** The MI Company is responsible for proper installations correctness of extent of the area, design, quantities of components supplied to the beneficiary.
- 11.5.23** The MI Company has to deploy sufficient staff as per the guidelines.

**11.5.24** MI Company should install the system as per the design already submitted with BOQ. If any change in design arises depending on the field conditions, re design has to be submitted.

**11.5.25** The MI Company should provide a sticker with a measurement of 12" \* 4" duly mentioning the ID No. and proceeding No. of the farmer along phone numbers of the DHSOs / DHSCOs DCO of MI Company and Toll free number of the District for adhering to HCU unit at the time of final inspection.

**11.5.26** The MI Company should pay the penalties imposed by the District Collector & Chairman, TGMIP.

**11.6** Responsibility of Beneficiaries/ farmers:

**11.6.1** Necessary documents required for sanction of MI system to be provided to the CLHSO.

**11.6.2** The particulars provided in the application form should be correct and should be genuine.

**11.6.3** The Beneficiary has to apply the MI system to the crop available on land or proposed crop to be taken in the crop rotation.

**11.6.4** The Beneficiary has to open trench as per the marking given by the MI Company and as per the recommendations of the MI company representative (Trench size) within 7 days after marking given by the MI Company.

**11.6.5** Beneficiary has to coordinate with the MI Company at the time of Survey /installation.

**11.6.6** Beneficiary has to verify the quantities of components received in the field with the delivery challan.

**11.6.7** Trenching has to be done by the beneficiary on his own cost.

**11.6.8** Beneficiary should coordinate with the MI Company for completion of installation within 15 days after Trench opening.

**11.6.9** Beneficiary has to preferably construct the suitable size of platform of brick masonry or cement concrete should be constructed by the Beneficiary for installation of Head Control Unit(HCU).

**11.6.10** Beneficiary to Check that the material received is free from any defect and damages.

**11.6.11** Cooperate with MI Company/CLHSO for trial run, and after trail run of the MI system the Beneficiary has to verify the leakages if any and the trench has to be closed.

- 11.6.12** The Beneficiary has to maintain the system as per the suggestions given by the MI Company.
- 11.6.13** Beneficiary has to attend the training programmes /service campaigns conducted by the Department and MI Company.
- 11.6.14** Beneficiary should ensure that the MI system is used sustainably.
- 11.6.15** Beneficiary has to allow all the inspection teams to be inspect the MI system and to give feedback of operation of the MI system.
- 11.6.16** The Beneficiary has to attend preliminary inspection and final inspection.