

Annexure – 9.51

No 80/SHM/2012

Dated 03-12-2012

CIRCULAR

Sub: - Hi-tech Farming – Operational Guidelines – Issued – Reg.

Ref: - (1) G.O (Rt) 1304/2012/AD dated 22.06.2012
(2) G O (Rt) no 1595/2012/AD dated 06-12-2012
(3) Minutes of the State Level Technical Committee dated 05-11-2012
(4) Decisions taken in the Special Working Group held on 06-11-2012

As per the Government Order cited 1st, sanction has been accorded for the implementation of the following components under the scheme Hi-tech Farming 2012-13

- A. Establishment of green house demonstration units.
- B. Establishment of naturally ventilated green house units (Hi-tech farming)
- C. Establishments of precision farming unit.

A. Establishment of Green House (Poly House) demonstration units.

1. 21 Hi-tech green house demonstration units with an area of 500 sq m will be established under this component. Kerala Agro Industries Corporation Ltd is entrusted with the work of construction of the demonstration units. Out of this 18 units will be under public sector and are eligible for 100% assistance. If the cost of erection of the demonstration unit exceeds the unit cost of Rs 935/ sq m the amount over and above Rs.935/sq.m will be met by Government institutions themselves, based on actual expenditure incurred by Kerala Agro Industries Corporation Ltd and approved by Government. Three hi-tech green house demonstration units will be established in private sector with assistance @ 90 % of the unit cost ie Rs 935/sq m. If the cost of erection of the demonstration unit exceeds the unit cost of Rs 935/ sq m the amount over and above Rs.935/sq.m the additional amount will be met by the beneficiary institution.

2. Financial outlay for Green House (Poly House) demonstration units.

Sl. No	Particulars	Total assistance (lakh Rs.)
	Establishment of Demonstration units	
1	18 units with 100% assistance (500 sq.m. x Rs. 935/ sq.m. x18 Nos.)	84.15
2	3 units with 90 % assistance (500 sq.m x. Rs. 935/ sq.m. x90 % x 3 Nos.)	12.6225
	Total	96.7725

3. The demonstration units will be constructed by adopting the design prepared by Kerala Agricultural University.
4. The State Agricultural Engineer will accord Technical sanction for the approved design of the structures.
5. The provision of Rs.935/sq.m is meant for the construction of poly house only. The Kerala Agro Industries Corporation Ltd will extend agronomic support to the beneficiary institutions through the agencies selected based on the bidding procedure followed by them and the vetting of the Consultative committee.
6. The list of institutions selected for Establishment of Green House (Poly House) demonstration units is as follows.

LIST OF 18 INSTITUTIONS WITH 100% ASSISTANCE

SL.NO.	DISTRICT	INSTITUTION
1	Thiruvananthapuram	State Seed Farm, Ulloor
2	Kollam	RARS, Sadanandapuram
3	Kottayam	District Agricultural Farm, Kozha
4	Idukki	State Vegetable Farm, Vandiperiyar
		Vattavada (SHM group)
		Kanthallur (SHM group)
		KLD Board, Mattupetti
5	Pathanamthitta	Sugarcane Farm, Pandalam
6	Alappuzha	District Agricultural Farm, Mavelikkara
7	Thrissur	State Seed Farm, Mannuthy
8	Malappuram	State Seed Farm, Anakayam
9	Palakkad	State Seed Farm, Kunnannur
10	Kozhikode	Agricultural Wholesale Market, Vengeri
11	Wayanad	Regional Agricultural Research Station, Ambalavayal
		Agricultural Wholesale Market, Sulthan Bathery
12	Kannur	District Agricultural Farm, Taliparamba
		Krishi Vigyan Kendra, Panniyur, Kannur
13	Kasaragod	College of Agriculture, Padanakkad

LIST OF 3 INSTITUTIONS WITH 90% ASSISTANCE

SL. NO.	DISTRICT	INSTITUTION
1	Thiruvananthapuram	Santhigiri Ashram , Pothencode
		Saigram, Thonnakkal
2	Kottayam	Deva Matha College, Kuravilangadu

7. The beneficiary Institutions will sign an agreement with the respective District Horticulture Missions on behalf of State Horticulture Mission, Kerala before starting the construction work.
8. Construction of the demonstration units will be completed before 28-02-2013
9. The technical evaluation of the structure constructed should be carried out by the District Level Technical Committee constituted as per G O cited 2nd under the chairmanship of Principal Agricultural Officer. The funds will be released to KAICO from SHM-HQ based on the recommendation of DLTC.
10. The payment will be made to KAICO from State Horticulture Mission - Head Quarters on production of claims certified by the District Level Technical Committee for release of subsidy. The expenditure in this regard will be met from the amount released by the Director of Agriculture under the **H/a 2401-00-113-82 plan.**
11. The Cost and Material Specifications for Construction of 504 Sq.m (28m X 18m X 5m) Polyhouse with GI Pipe Structure (as per GoI norms) is as follows:

Sl.No.	Material Description	Quantity	Rate (Rs.)	Amount (Rs.)
1	GI pipe 60 mm x 60 mm with 2mm thick for end frames and main poles	562 m/1687 kg (wt. 3kg/sq.m.)	69/Kg	116403
2	GI pipe 48 mm x 48 mm with 2mm thick for trusses	423m/956 kg (wt.2.07kg/sq.m.)	69/Kg	65964
3	GI pipe 42 mm x 42mm with 2 mm thick for purlins	150m/233kg (wt.1.56 kg/sq.m.)	69/Kg	16077
4	GI pipe 33/2 for purlins members	308m/480kg (wt 1.56 kg/sq.m.)	69/Kg	33120
5	UV stabilized 200 microns film	925 sq.m.	45/sq.m.	41625
6	Insect proof net	82 sq.m.	38/sq.m.	3116
7	Fixtures/Fittings	LS		70000
8	Shadenet	500 sq.m.	28/sq.m.	14000
9	Irrigation/Fogging/Misting system	1 Unit	55000/unit	55000
10	Civil work-pole, grouting, brick boundary, flooring etc.			16000
11	Labour charges			40000
	TOTAL			471305
	Cost/unit			935/sq.m.

B. Hi-tech Farming

- Under this programme sanction has been accorded to establish 3 units of naturally ventilated poly house units of size 400 sq.m in each Grama Panchayat of the State.
- The district wise targets based on the number of grama panchayats is included as **annexure I**. In any case, the number of units should not be more than 3 in each grama panchayat.
- As per the norms of NHM, the total cost for construction of naturally ventilated green house structure is **Rs.935/sq.m.** In the budget proposal of 2012-13, the recommended unit size for the construction of naturally ventilated green house structure is **400 sq.m.** Hence an amount of **Rs.3.74** lakh will be the total cost for establishment of a green house of 400sq.m unit as per the NHM norms. Each unit will be eligible for assistance @ **75%** of the unit cost. Out of this **50% assistance limited to Rs 1.87 lakhs will be from the provision made under the Approved Annual Action Plan of State Horticulture Mission – Kerala for 2012-13 and 25% assistance limited to Rs 0.935 lakhs will be from the provision made under the plan scheme 'Project Proposals for Hi-Tech Farming) for 2012-13.** The balance amount will be borne by the beneficiary.

4. Financial outlay for establishment of naturally ventilated green house units

Sl.No.	PARTICULARS	Amount (Rs. in lakh)
a.	Total cost for 400 sq.m unit area (one unit)	3.74
b.	Total amount for one Panchayat @3 units per Panchayat=3xRs.3.74 lakh	11.22
c.	Total amount for the state=3xRs.3.74 lakhx978	10973.16
d.	Govt. of India share	5486.58
e.	State Govt. share	2743.29

5. District Level Technical Committee

- | | |
|---|------------|
| 1. Principal Agricultural Officers at the district | – Chairman |
| 2. Project Director (ATMA) | – Member |
| 3. Deputy Director (NWDPRA and vegetables) | – Member |
| 4. Assistant Executive Engineer (Agri) | – Member |
| 5. KAU representative from research station within the district | – Member |
| 6. VFPCCK representative from concerned district | – Member |
| 7. Deputy Director (Horticulture) | - Convener |

The District Level Technical Committee will do the technical evaluation of the structure constructed by various agencies including entrepreneurs /individuals for release of subsidy. The DLTC should prepare district level production plan, marketing plan, ensure quality and availability of inputs and planting materials, capacity building of technical team as well as entrepreneurs under the scheme.

6. Mode of implementation

- i. The scheme will be implemented in a credit- linked manner and the assistance will be released to the bank account of the beneficiaries. All beneficiaries need to be made aware of this fact and only those willing to avail credit need to be encouraged.
- ii. The estimate for the construction of the Polyhouse should be prepared by AEE(Agri.)/AE(Agri.)/AE/AXE(LSGD)/Registered Engineer.
- iii. An agreement should be executed between the selected beneficiary and the Deputy Director of Agriculture (H).
- iv. The selected beneficiaries will be given orientation on Hi-tech farming.
- v. The technical specifications in this circular and annexures should be treated as the technical sanction for the scheme
- vi. The Deputy Director of Agriculture (H) of the districts should issue a permissive sanction to all selected beneficiaries for starting the construction work of the poly house.
- vii. The beneficiaries in each block will be organized in to a cluster.
- viii. A workshop will be organized for the beneficiaries for on hand experience and to finalize the production plan and marketing plan for each district. The experts from Kerala Agricultural University, representatives from Hortcorp, VFPCCK should also be involved in the preparation of production and marketing plans.
- ix. A detailed production plan which should include the crops to be cultivated, rotation of crops, staggered cropping plan etc. should be prepared for each block in order to ensure the availability of the produce throughout the year and to avoid glut in the market.
- x. Hortcorp will assist in marketing the produce. A detailed production and marketing plan should be prepared by DLTC in order to facilitate efficient marketing of the produce and forwarded to this office on or before 15-12-2012.
- xi. The farmers will have the freedom to construct the polyhouse by any agency of his choice without compromising the quality specifications.

- xii. The technical evaluation of the structure constructed should be carried out by AEE(Agri.)/AE(Agri.)/AEE/AE(LSGD)/Registered Engineer.
- xiii. The technical evaluation details will be submitted to the District Level Technical Committee, constituted as per G O read as second paper above, under the chairmanship of Principal Agricultural Officer. The funds will be released based on the recommendation of DLTC.
- xiv. Since the assistance to the farmers is sourced from both NHM and state funds, the expenditure incurred for releasing the subsidy should be booked separately in two heads ie (1) NHM share 50% and (2) state share 25%.
- xv. The project will be implemented through Krishi Bhavans at grama Panchayat level. Agricultural Officer of the Krishi Bhavan will be responsible for the implementation of the project at grama Panchayat level.
- xvi. Deputy Director of Agriculture (H) will be in charge of the implementation of the project at the District level.

Sl. No	Item	Indicative Specifications
1	Structure:	Structure should withstand winds of velocity upto 120 km/hour, without weld
1	Columns	-Tubular Structure: 60 OD and 48 OD, 2.0 mm thick
2	Purlin	-Tubular structure: 48 mm OD/2.0 mm thick at ridge and 42/43 mm OD/2.0 mm thick for centre
3	Trusses	-Tubular structure : bottom horizontal 60 mm OD/2.0 mm thick G.I Pipe, top chords and truss members 48 mm OD and 43 OD 2.0 mm thick Bracing 32 mm OD/1.8 mm thick G.I Pipe structural members to be fitted in plated nuts, bolts and washers without welding.
4	Span size	8.0 m plus 2.0 m on both sides
5	Gable length	4.0 m
6	Overall slope	The overall slope of the gutters and the internal soil surface should be 1.0-1.5%
7	Clamps and nut bolts	Well compatible and galvanized
8	Height	Centre ht. 5.5 m, side ht 3.0 m
9	Aluminum profile	C type Aluminum profile to fix plastic film to the structure by means of self tapping screws. Weight of aluminum profile is 200-220 GSM
10	Spring Insert	Zigzag spring insert to fix shade net to Aluminum profile 2.3 mm diameter of spring wire with cold galvanization. Wire material should be high carbon steel with spring action
11	Foundation	Columns area fitted over ground "inserts"/ and bolted to insert pipe. Length of insert 1.0 to 1.10 meter, PCC of CM ratio 1:2:4 of 40 cm x 40 cm x 90 cm sizes & filling the pit with 1:2:4 concrete hands mixed with appropriate grade cement
12	Entrance	Polycarbonate sheet, G.I. frame 2m x 2m size hinged type with locking arrangement. (Double door with anti room with provision of entry and exit for tractor), 50 mm PCC flooring over 75 mm thick sub base
13	Poly film	200 micron thick, U.V stabilized, diffused/clear depending upon requirement, thermic, anti sulphur in case of rose cultivation, anti drip and anti dust made up of Ginegar/Essan & SN Industries conforming to national and international standards
14	Ventilation	Insect proof net on sides/top : UV stabilized 40-50 mesh and white in colour on all sides of ventilation portion. 35% white shade net can be used depending upon the crop and climate requirement
15	Shading net	50% UV stabilized HDPE Agro shading net Green/Black color, collapsible system will be provided
16	Drip irrigation system	It consist of 1.0-2.0 lph, spacing 20/30 cm with complete control unit-filter, valves, ventury system, pumps, control panel etc.
17	Fogging/misting system	It consist of four way anti leak fogger 28 lph flow rate and particle size 80-100 micron, 16 mm lateral, PVC pipe 6 kg/cm ² valves, filter, pump, panel with volt meter, MCB, relay, temp and humidity sensor etc. complete application rate 3 mm/hr. Spacing from lateral line to lateral line is 2.5 m and fogger to fogger also 2.5 m all across the poly house along the G.I pipes across.
18	Piltz Timer for fogging/ misting system	Piltz Timer with manual operation.

- xvii. Anomaly, if any, at district level may be brought to the attention of the State Level technical Committee

Technical specification – Indicative specifications. The expenditure for providing the SHM-K share of assistance (50%), the provision made under the component Protected Cultivation – Naturally Ventilated tubular structure of Annual Approved Action Plan 2012-13 should be utilized. The expenditure for providing share of assistance (25%) under State plan will be met from the amount released by the Director of Agriculture under the **H/a 2401-00-113-82 plan**.

C. Precision Farming Units

Precision farming or precision agriculture is a concept of using the new technologies and collected field information, doing the right thing, in the right place, at the right time. Collected information may be used to more precisely evaluate optimum sowing density, estimate fertilizers and other input needs and to more accurately predict crop yields. It helps in avoiding unwanted practice to a crop; regardless of local soil/climate conditions i.e. it reduces labour, water, inputs such as fertilizers, and pesticides etc. and assures quality produce.

The present programme envisages establishment of open precision farming system for cultivation of banana and vegetables. Cultivation is proposed to be undertaken in an area of 1000ha under open area precision farming. The entire programme is to be implemented both on individual and cluster basis, the unit proposed for single beneficiary will be 50 cents and for a cluster it will be 2ha.

The total financial outlay required for the project is as follows.

Component	Maximum permissible cost per ha(Rs)	Pattern of assistance (40%) (Rs.)	Total assistance (Rs. in lakh)
Open precision farming	1,00,000	40,000	400.00

Assistance for the establishment of precision farming unit will be borne by Government of Kerala. An amount of Rs.400.00 lakh will be required for the programme.

Open precision farming units will be established only in the districts of Palakkad and Kasaragod. The district wise target is as follows.

District	Project Cost (Rs.)	Physical Targe (Ha)	Financial Target (Rs.)
Palakkad	5,00,00,000	500	2,00,00,000
Kasaragod	5,00,00,000	500	2,00,00,000
Total	10,00,00,000	1000	4,00,00,000

The expenditure in this regard will be met from the amount released by the Director of Agriculture under the **H/a 2401-00-113-82 plan** for the year 2012-13

Sd/-
Mission Director.

ANNEXURE I
District wise Targets

Sl. No.	Districts	No. of Panchayats	Total No. of polyhouse
1.	Thiruvananthapuram	73	219
2.	Kollam	70	210
3.	Pathanamthitta	54	162
4.	Idukki	53	159
5.	Alappuzha	73	219
6.	Kottayam	73	219
7.	Ernakulam	84	252
8.	Thrissur	88	264
9.	Palakkad	91	273
10.	Malappuram	100	300
11.	Kozhikkode	75	225
12.	Wayanad	25	75
13.	Kannur	81	243
14.	Kasaragod	38	114
	TOTAL	978	2934