



REPORT OF JOINT INSPECTION TEAM WHICH VISITED KERALA



DATE OF VISIT: 30 JULY-04 AUGUST 2011



**NATIONAL HORTICULTURE MISSION
MINISTRY OF AGRICULTURE
DEPARTMENT OF AGRICULTURE & COOPERATION
KRISHI BHAVAN, NEW DELHI**

INDEX

Topic	Page No.
Main Observations	3
KOTTAYAM DISTRICT	5
Interventions	6
Observations	7
Glimpses of activities visited	9
ERNAKULAM DISTRICT	11
Interventions	11
Observations	12
Glimpses of activities visited	15
THRISSUR DISTRICT	16
Interventions	16
Observations	17
Glimpses of activities visited	19
Kerala Agricultural University	22
Glimpses of activities visited	
PALAKKAD DISTRICT	23
Interventions	23
Observations	24
Glimpses of activities visited	26
Centre for Perishable Cargo	27
Glimpses of activities visited	29
Status of project on Vegetable Initiative	30
Glimpses of activities visited	32
Annexure I :	Area, Production and Productivity in Ernakulam district
Annexure II :	Recommendations relating to Horticulture Development in Attappady

REPORT OF THE JOINT INSPECTION TEAM UNDER THE LEADERSHIP OF DR. JOSE C. SAMUEL, CHIEF CONSULTANT (NHM) WHICH VISITED KERALA DURING 30th JULY to 4th AUGUST, 2011.

The Joint Inspection Team (JIT) comprising of the following Members visited Kerala during 30th July to 4th August, 2011 to review the progress under the National Horticulture Mission (NHM) in the State:

1. Dr. Jose C. Samuel, Chief Consultant (NHM) - Team Leader
2. Shri Suresh Rawat, Chief Consultant (Media) from 31.07.2011
3. Dr. T.R Gopalkrishnan, Director of Research Kerala Agricultural Research University, Thrissur (on 3.8.2011)
4. Dr. (Ms) Anu C. Krishna, Associate Professor, Regional Agricultural Research Station, Kumarakom (on 31.07.2011)
5. Dr. (Ms) Anu Varghse, PI, PFDC, Tavanur-from 1.08.2011
6. Dr. V. Sreekumaran, Professor & Head, RRI, Vyttila (on 1.8.2011)
7. Shri.K. Babu, Joint Director of Horticulture, SHM, Thiruvanthapuram
8. Shri Shivanandan, Director, Project Planning & Implementation, Vegetable and Fruit Promotion Council of Kerala (VFPCK).

The JIT covered the districts of Kottayam, Ernakulam, Thrissur, Palakkad besides covering the project based activities at Kerala Agricultural University, Vellanikara, Thrissur and the Centre for Perishable Cargo at Cochin International Airport Ltd. (CIAL).

The JIT interacted with the District Collectors and Chairman of District Mission Committee in each of these District, except Palakkad.

MAIN OBSERVATIONS

1. There is good scope for promoting protected cultivation of high value vegetables and flowers in the high ranges like Vagomon in Kottayam district and Nelliampathy, Palakkad district. The main focus should be in harnessing off season production of high value vegetables and flowers.

2. Model Floriculture Unit established at Nelliampathy need to be monitored properly. The unit has been established through NERAMAC by involving a Delhi Based firm viz. Steel Biotech Ltd. There has been high mortality of the Gerbera plants produced through Tissue Culture due to poor internal drainage in the shade net house. While the funding was being done directly by the SHM HQ at Thiruvanthapuram, the District Officials were not aware of the objectives of the project. They were also not aware of the varieties of planting material being planted under protected cover.
3. Farmers need to be provided training on protected cultivation. The poly house constructed by Ms Mary Mathew at Kakkanathu needs better management and maintenance of the structure.
4. There is high demand for planting material for nendran variety of banana. Most of the farmers are making their own arrangements for taking up sucker based plantation. The TC labs established in the public and private sector are not producing the required quantity of planting material. TC lab set up at Punkeelam village, lacks proper hygiene, as the unit was located adjacent to a saw mill.
5. The model nursery under establishment at Govt. Orange & Vegetable Farm, Nelliampathy, Pallakkad lacks proper lay out plan. Mother Plants have been supplied directly by SHM HQ without indicating the varietal details and characteristics.
6. There is good scope for development of water resources in conjunction with micro irrigation as being done in Kottayam and Thrissur districts.
7. Rural markets set up by VFPC with NHM assistance at Koovapady and Pazhayannur is facilitating the farmers to sell their fruits and vegetables at remunerative rates. The marketing network needs to be strengthened along with establishment of wholesale/ Terminal Markets. Even in the existing rural markets better facilities like auction platform and shed needs to be provided. The market visited at Koovapady lacked these basic facilities.
8. Kerala Agricultural University along with affiliated Colleges, Research Stations and KVKs have been associated with developmental projects covering planting material, INM/IPM Infrastructure, Protected cultivation, Organic Farming (FLD), and HRD. While manpower and technical support

is being provided by the University the sustainability of these projects will depend on adopting a commercial scale rather than implementation on a research mode.

9. The Centre for Perishable Cargo set up at CIAL is facilitating the export of vegetables. Infrastructure development of ancillary facilities need to be completed expeditiously. In this context the power supply to the newly established sub station needs to be expedited by Kerala State Electricity Board (KSEB).

KOTTAYAM DISTRICT

The details of area, production and productivity of main horticultural crops in the district are given in **Table 1**.

Table 1. Area Production & Productivity of Major Horticulture Crops of Kottayam District

Year	2006-07			2008-09			% Difference		
	Name of the crop	Area (ha)	Prodn. (MT)	Pdctvty (T/ha)	Area (ha)	Prodn. (MT)	Pdctvty (T/ha)	Area (ha)	Prodn. (MT)
Mango	3000	16800	5.6	2849	15054	5.6	-5.0	-10.4	0.0
Banana	6288	55247	8.8	6650	59957	9	5.8	8.5	2.3
Pineapple	998	4682	4.7	1689	9769	5.8	69.2	108.7	23.4
Pepper	10418	1754	0.2	9573	1347	0.14	-8.1	-23.2	-30.0
Ginger	230	645	2.8	193	528	2.7	-16.1	-18.1	-3.6
Turmeric	169	401	2.4	169	388	2.3	0.0	-3.2	-4.2
Nutmeg	1147	747	0.6	1236	743	0.6	7.8	-0.5	0.0
Cashew	589	226	0.4	554	160	0.3	-5.9	-29.2	-25.0
	22839	80502		22913	87946		47.58	32.46	

Source: APP 2011-12 of SHM, Kerala

A variety of plantation crops are being cultivated in Kottayam district of which almost 60% of the area is under rubber followed by coconut (22%).

The main crop identified for development in the district under NHM are mango, aonla, banana, pineapple, pepper, ginger, turmeric, nutmeg, cashew, cocoa, flowers and aromatic plants. Beekeeping and mushroom cultivation are also being taken up.

There has been improvement in the area and production of banana and pineapple in the district, although NHM interventions were not initiated in full scale. The NHM Scheme was introduced in Kottayam District during the year 2009-10. The SHM has, however, been implementing area expansion programmes in the district since 2005-06.

Interventions

The main interventions taken up in Kottayam district are area expansion, rejuvenation, protected cultivation, creation of water resources, INM/IPM including infrastructure like Bio control lab, organic farming, and farm mechanization. The details of investment made under NHM in the district are given in **Table 2**.

Table 2: Investments made under NHM in Kottayam District

Year	Amount (Rs. in lakh)		Main activities
	Release	Exp.	
2006-07	100.00	-	-
2007-08	300.00	400.04	Area expansion
2008-09	300.00	112.21	Area expansion
2009-10	400.00	414.31	Nursery, Area expansion, rejuvenation.
2010-11	255.00	262.05	Area expansion, rejuvenation, protected cultivation, INM Infrastructure, Rural Market.
2011-12	125.00	62.94	Area expansion, rejuvenation, protected cultivation, PHM.
Total	1480	1251.55	

The JIT visited various activities covering area expansion, protected cultivation, creation of water resources and Bio control lab. The JIT also visited a banana ripening chamber for which subsidy has been sought during the current financial year 2011-12.

Mrs. Lalimma Joseph, Deputy Director of Agriculture (Hort.), Kottayam accompanied the Team during the visit.

Observations

1. There is high demand for cultivation of nendran banana in the district. Adequate quantity of planting material need to be ensured for this purpose. Presently the farmers are making their own arrangements to procure the planting material from a nursery located in Pala Block. There is scope for promoting Tissue culture banana.
2. Disbursement of subsidy amount for the area expansion activity taken up by Shri Vijayan Vellappasal for banana and Shri A.J Sebastian for pineapple, needs to be expedited.
3. Creation of individual water resource by Ms. Rosamma Mathew has helped in irrigating the nutmeg plantation by deploying innovative techniques of water conveyance from the water source through piped systems to individual trees. There is ample scope for developing such water resource projects in the district through proper dissemination.
4. Protected cultivation in hi-tech green house at Kurishmala Ashram, which is located at an altitude of about 4000 ft, is enabling to produce vegetables for consumption by the Ashram inmates. There is scope for harnessing off season cultivation of vegetables and flowers in the area.
5. Due to general awareness about the harmful effects of chemicals, there is a need to popularise the use of IPM/INM technologies through mass campaigns by involving the beneficiaries who have been assisted for infrastructure development under NHM.
6. Hardly any Post Harvest Management (PHM) projects have been taken up in the district.

JIT Members called on the District Collector & Chairperson of District Mission Committee (DMC), Ms Mini Antony who has been overseeing the District Administration since September, 2009. She was appraised about the observations of the JIT.

During the discussions she mentioned that the Panchayats were getting large sums of many under various schemes in accordance with the requirement that 40%

of the funds earmarked under various schemes are to be spent directly by the Panchayats. Funds thus earmarked could be used for development of agriculture in the District and for taking up mechanization and creation market infrastructure. Despite her best efforts, the PRIs are not integrating the schemes for development of agriculture in the District. She added that many women SHG have taken up production of cut flowers but they are not able to have proper market tie up.

Meeting of DMC during 2011-12 is yet to be convened. The DC stated that she will be addressing the issues relating to PHM and marketing during the meeting of the DMC.

GLIMPSES OF ACTIVITIES VISITED BY JIT IN KOTTAYAM DISTRICT



Shri Mathews of Kanakakkary Village had availed subsidy for setting up a water tank during 2010-11. By using indigenously developed irrigation system in the form of sprinklers, he has been able to get good yield from his nutmeg plantation.



Vegetable cultivation inside hi-tech green house at Acharya Kurishmala Ashramam, which is located at an altitude of about 4000 ft. Vegetables produced is being used for own consumption. Vegetables being produced include gourds, okra, beans, cauliflower.

KOTTYAM... (CONTINUED)



Area expansion activities under banana and pineapple at Theekoy and Thalanadu villages. Nendran variety of banana would be fetching a premium price during the ensuing Onam season.



View of Banana ripening chamber established by Shri Antony at Tropical Bio Science, Pala, Kottayam for which subsidy has been applied for.



Bio Control Lab established by Shri K.J. Jacob at Kottayam during 2009-10.



JIT members, interacted with Ms Mini Antony, District Collector and Chairperson of District Mission Committee, Kottayam. She stressed the need for integrating programmes by PRIs for overall development of agriculture in the District.

ERNAKULAM DISTRICT (01.08.2011)

The details of area, production and productivity of major horticultural crops in Ernakulam district are given in **Table 3**.

Table 3: Area Production & Productivity of Major Horticultural Crops in Ernakulam District

Year	2006-07			2008-09			% Difference		
	Name of the crop	Area (ha)	Prodn. (MT)	Pdctvty (T/ha)	Area (ha)	Prodn. (MT)	Pdctvty (T/ha)	Area (ha)	Prodn. (MT)
Mango	3892	1879	4.8	3595	17364	4.8	-7.6	824.1	0.0
Banana	11123	95324	8.6	10168	85974	8.5	-8.6	-9.8	-1.2
Pineapple	7489	70045	9.3	6108	59864	9.8	-18.4	-14.5	5.4
Pepper	6637	1133	0.2	5317	928	0.2	-19.9	-18.1	0.0
Ginger	396	1322	3.3	260	736	2.8	-34.3	-44.3	-15.2
Turmeric	629	1874	3	326	869	2.7	-48.2	-53.6	-10.0
Nutmeg	5403	6070	1.1	6005	5209	0.9	11.1	-14.2	-18.2
Cashew	948	438	0.5	596	241	0.4	-37.1	-45.0	-20.0
Coconut	54710	376	0.01	46240	249	0.01	-15.5	-33.8	0.0

Among horticultural crops, maximum area is under coconut in Ernakulam district, followed by banana.

The main crops identified for development under NHM in the district are banana, cocoa, pineapple, flowers and spices.

The area, production and productivity of almost all the horticultural crops have registered a decline. This issue was pointed out to the SHM in February, 2011. While reviewing the matter, Deputy Director of Agriculture (H), Ernakulam provided another set of figures (**Annexure I**) which is much in variance with the figures provided by the SHM in the AAP 2011-12. SHM need to resolved the discrepancy.

Interventions

The major interventions taken up under NHM in Ernakulam district are establishment of nurseries, are expansion, rejuvenation, INM/IPM infrastructure creation of water resources, protected cultivation, organic farming and setting up of rural markets. The details of investments made under NHM in Ernakulam district are given in **Table 4**.

Table 4: Investments made under NHM in Ernakulam District

Year	Amount (Rs. in lakh)		Main activities
	Release	Exp.	
2005-06	47	-	
2006-07	443.05	164.29	Planting material, area expansion, rejuvenation, Disease forecasting unit, PHM (Pack house)
2007-08	200.0	191.07	Planting material, area expansion, INM/IPM, Plant Health Clinic (PHC) Rural market, Centre for Perishable Cargo at CIAL.
2008-09	200.0	401.65	Planting material, area expansion, INM/IPM Infrastructure, (PHC)
2009-10	400.00	446.63	Area expansion, HRD
2010-11	102.00	249.84	Tissue Culture Lab, Area expansion, protected cultivation
2011-12 (Till June)	75.00	74.10	Area expansion, Rural market.
Total	1467.05	1527.58	

The JIT visited some of these activities such as rehabilitation of TC lab under private sector, protected cultivation in Green House and rural market.

Ms Sherifa Thoppia, Deputy Director of Agriculture, Ernakulam was present during the discussions at the District Collectorate. Dr. V. Sreekumaran, Professor & Head, Rice Research Station, Vyttila, KAU and Shri Reji, Field Consultant, SHM accompanied during the field visits.

Observations

1. Rehabilitation of a TC lab was taken up by Hafi Orchids at Ambunadu which is producing planting material of 22 varieties of banana. The planting material is being mostly sold outside the State. The cost of the planting material range from Rs. 25 to Rs. 35 per plant, depending on the variety. Planting material for orchids and anthurium are also being produced by the Tissue Culture lab.

Mother block has been maintained in which some banana plants have been imported from South Africa. A subsidy assistance of Rs. 4.00 lakh was provided during 2007-08. Director, VFPCCK, who accompanied the JIT, mentioned that they had some clarification about the cost of planting material of banana from the unit for banana, which was not responded to by the proprietor.

2. While sanctioning project, SHM, Kerala should undertake a MOU with TC lab to supply predetermined quantity of planting material of the mandated crop of the locality at reasonable rates.
3. The rural market established by VFPCCK at Koovapady during 2007-08 with an assistance of Rs. 3.75 lakh is being run by Swasraya Karshak Samity (SKS) comprising of 395 members. It has an Executive Committee comprising of 21 members. Besides, about 580 non members are also availing the market facility, mainly for trading bananas. The market functions on two days in a week (Sundays and Wednesday) when the Member as well as non member producers bring their produce to the market for sale. The sale of produce has increased from Rs. 111.00 lakh during 2006-07 to Rs. 254.80 lakh in 2010-11. During the time of the visit, it was noted that the condition of the market needed improvement in terms of raised platform and drainage. Since the market is deriving an income of over Rs. 2.5 crore every year, some amount needs to be invested for improving the infrastructure facilities. Director, VFPCCK, agreed to do the needful.
4. Ms Mary Mathew of Kakkanathu village has taken up vegetable cultivation in 90 Sq. m (18 mx 5 m) area of green house constructed at a cost of Rs. 51,160 during 2010-11. Subsidy amount of Rs. 12,000/- is yet to be disbursed. A group of seven cultivators have taken up protected cultivation in similar structure in the area. On enquiry about the reason for taking up protected cultivation it was informed that they were motivated after attending a workshop organized by a KVK. The farmers, however did not have any knowledge or training on protected cultivation. The local Agriculture Officer was advised to organized a study tour to PFDC, Tavanur for the benefit of the farmers.

Before proceeding to the field visit the JIT called on Shri Sheik Parith, District Collector of Ernakulam District, who had taken charge of the District recently. Ms. Asha Devi Verma, Principal Agricultural Officer, Ernakulam also joined the discussions.

During the discussions, DC was appraised about the objectives of the NHM Schemes which envisaged the holistic development of potential crops duly ensuring backward and forward linkages. As far as Ernakulam district was concerned, hardly any PHM related activities have been taken up. There is scope to take up protected cultivation. It was also pointed out that despite huge investments under area expansion programme, the area, production and productivity of horticultural crops has been registering a declining trend in the district.

The DC observed that lack of awareness among the farmers could be a major reason for poor off take of PHM projects. He directed PAO to chalk out a schedule of study tour of the farmers to neighbouring states like Karnataka and Tamil Nadu to see the activities there.

Shri Babu, Joint Director mentioned that provision exists under HRD component of NHM Scheme to mount such study tours. Funds will be provided by the SHM based on specific project proposal submitted by the district Authority.

GLIMPSES OF ACTIVITIES VISITED BY JIT IN ERNAKULAM DISTRICT



View of Mother plants block and hardening facility at the Tissue Culture lab for which an assistance of Rs.4.00 lakh was provided to Ms Hafi Orchids at Ambunadu village during 2007-08.



View of the Rural Market set up by VFPCCK at Koovapady village during 2007-08. Mostly bananas are being sold in the market. Members of the Farmer Group (Swasrya Krashak Samity) running the Rural Market are also seen.



JIT interacted with Shri Sheik Parith, District Collector and Chairman of DMC. He stressed on the need for HRD and training of farmers, for which a schedule will be prepared.

THRISSUR DISTRICT (02.08.2011)

Details of area, production and productivity of horticultural crops in Thrissur district is given in **Table 5**.

Table 5: Area Production & Productivity of Major Horticulture Crops of Thrissur District

Year	2006-07			2008-09			% Difference			
	Name of the crop	Area (ha)	Prodn. (MT)	Pdctvty (T/ha)	Area (ha)	Prodn. (MT)	Pdctvty (T/ha)	Area (ha)	Prodn. (MT)	Pdctvty (T/ha)
	Mango	6739	33830	5	6092	30582	5	-9.6	-9.6	0.0
	Banana	8734	64491	7.4	7037	48183	6.8	-19.4	-25.3	-8.1
	Pepper	5623	1006	0.2	4829	841	0.2	-14.1	-16.4	0.0
	Nutmeg	3309	2630	0.8	4239	3346	0.8	28.1	27.2	0.0
	Cashew	2419	960	0.4	2441	1049	0.4	0.9	9.3	0.0
		26824	102917		24638	84001		-14.14	-14.79	

Among the horticultural crops covered under NHM banana has the maximum area as well as production, followed by mango.

Incidentally, Kerala Agricultural University is also located in Thrissur district, which is the main hub of knowledge as far as agriculture is concerned in the State of Kerala. However, neither the intervention under NHM nor the presence of SAU in the district seem to have had any impact on the area, production and productivity of horticultural crops in the district.

The main crops identified for development under NHM in Thrissur district are banana, mango, pineapple, spices and floriculture.

Interventions

Interventions were initiated in Thrissur District under NHM since 2005-06. The main interventions include planting material development, area expansion, rejuvenation, organic farming, HRD and rural market. Year wise details of investments made in Thrissur district are given in **Table 6**.

Table 6: Investments made under NHM in Thrissur District

Year	Amount (Rs. in lakh)		Main activities
	Release	Exp.	
2005-06	6.5	-	
2006-07	380.18	22.04	Nursery, area expansion, HRD
2007-08	100.00	324.96	Nursery, area expansion, rejuvenation, Leaf Tissue Analyses Lab (LTA), Front Line Demonstration, HRD, LTA, PHC
2008-09	400.00	394.52	Area expansion, rejuvenation, HRD
2009-10	400.00	478.94	Veg seed production, area expansion, vermi compost unit, Rural Market.
2010-11	367.00	395.79	Area expansion, rejuvenation, BCL, Creation of Water Resources, Model Floriculture Unit.
2011-12 (Till June)	10.00	5.96	Area expansion, HRD, Rural market
Total	1663.68	1622.2	

JIT Members visited some of the activities such as rural market, TC lab, water resource development and protected cultivation of floriculture. Dr. Narainan Kutty, Professor, Agriculture Research Station, Mannuthy and Ms. Omana, Deputy Director of Agriculture (H), Thrissur accompanied during the visit.

Observations

1. The Rural Market established by VFPCCK at Pazhzyannur in 2009-10 with an assistance of Rs. 3.75 lakh is being run by the SKS involving 520 farmers. The market is being used mainly for trading of vegetable like beans, bitter gourd, bottle gourd and limited quantities of banana. Basic facilities like platform, weighing bridge and shed have been provided.
2. Incidentally, the Team Leader had visited the same market in 2009 when it was commissioned. It was observed that RKVY funds have also been availed subsequently to provide an additional shed.
3. The farmers have purchased hybrid vegetable seeds from Private firm like Namdhari Seeds, which is providing good yield. Beans was fetching a local price of Rs. 30/- per kg.
4. The trade of vegetable was Rs 101.10 lakh during 2006-07, which has increased to Rs 215.10 lakh in 2009-10.

5. There is scope and need to develop more of such rural markets in the District. However, VFPCCK are not in a position to add new markets due to shortage of staff. Conceptually, VFPCCK is supposed to do hand holding for an initial period of 2-3 years by appointing a Secretary to run the SKS affairs and withdraw once the market is established fully. However, such handing over has not taken place so far.
6. The TC lab, which was rehabilitated with an assistance of Rs. 4.00 lakh during 2008-09 at Punkulam village was not producing any TC plants during the time of visit. The lab was located along with the building which housed a saw mill. This has resulted in high contamination of the plants. The TC unit has produced only 25,000 plants of banana, which is not an optimum level. The owner has since shut down the saw mill and shifted the equipments with the intention to restart production of TC banana.
7. The vermi compost unit established at Thanisseri with an assistance of Rs. 30,000 by Shri T.P Prakash needed better upkeep and proper drainage.

The JIT Member had called on Shri Saral Kumar, District Collector of Thrissur District who had taken charge of the District Administration in July, 2011. He was apprised about the objectives of NHM scheme, particularly on the aspects of ensuring backward and forward linkages.

It was pointed out that although the District Action Plan includes all aspects of development, from planting material to setting up of markets, the PHM and market related activities are not taken up to the desired extent. The DC mentioned that he was involved in some of these aspect as SDM in Kannur District in his previous posting. He would be taking up through monitoring of the NHM activities.

GLIMPSES OF ACTIVITIES VISITED BY JIT IN THRISSUR DISTRICT



Activities at the Rural Market set up by VFPCK at Pazhayannur during 2009-10. Vegetables like cluster beans, bitter gourd are being sold extensively in the market.



Area expansion under Cocoa by Shri Abdul Rahiman at Puttenkopda village



Shri Ranesh and Ansa have taken up floriculture under protected cultivation



Creation of water resources at Mariyapuram Mission Home



JIT Members interacted with Shri.B. Saral Kumar District Collector and Chairman, DMC and provided an overview about the NHM Scheme.

GLIMPSES OF ACTIVITIES VISITED BY JIT IN KAU, THRISSUR



Dr. Rema Menon, Prof. & PI explains the functioning of Tissue Culture lab for banana at BRS, Kannara



Dr. Anita Cherian, Prof. & PI explains the functioning of Plant Health Clinic at BRS.



Dr. Maicykutty Mathew, Prof. & PI explains the functioning of Bio Control Lab. Innovation has been made in arranging the bottles in a slanting position (Centre) to derive more surface area



Some of the trainees who are undergoing Gardener's Training at BRS



Eco friendly carry bag made of banana fiber.



Planting material being transported from Model Nursery

KAU, THRISSUR... (CONTD)



Dr. P.K. Rajeevan, Prof. & PI explains the activities taken up at Model Floriculture Unit which has been established in the main campus of KAU, Vellanikara.



Dr. K.R. Lila, Prof. & PI explains the functioning of Bio Control Lab

Building for the BCL



Leaf Tissue Analysis Lab



Dr. Fatima Bivi, Assoc. Director of Research is seen with Prof. S Prasanna Kumari at the Cocoa Nursery

Kerala Agricultural University

JIT visited a number of activities funded under NHM at the Banana Research Station, Kannara of KAU as well as in the University Campus. Dr. T.R. Gopal Krishnan, Director of Research, KAU also accompanied.

It was impressed upon them to implement the projects such as TC Lab, Bio Control Lab, Plant Health Clinics etc. on a commercial scale rather than on a research mode. It was also advised that the information generated by the PHC should be placed on the public domain along with advisories.

A Model Floriculture Unit has been established with NHM funding in the Campus. Dr. P.K Rajeevan explained the funding of the unit, which comprised of 3 Nos of naturally ventilated poly houses of 500 Sq. each, two shade net houses of 1000 Sq m. each and one Hi-tech mist chamber. The mist chamber was under commissioning. Flowers such as Anthurium, orchids, Gerbera, cut foliage and ornamental plants have been taken up for cultivation. Some of the plants were supplied directly by SHM HQ.

It was pointed out that the MFC should cater to the development of planting material for flowers of local importance. NHM logo is also to be displayed.

The Leaf Tissue Analysis Lab set up at the Radiotracer Laboratory is mainly catering to soil testing and analysis. Out of total samples being analysed about 80% is for soil testing. An income of Rs. 7.57 lakh has been realized by the lab. Prof. Suresh Kumar, PI of the unit was of the view that both soil and leaf analysis are essential for identifying the nutrient deficiencies. High deficiency of Boron has been noticed in the samples analyzed.

PALLAKHAD DISTRICT

Area, production and productivity of major horticultural crops in Pallakhad district are given in **Table 7**.

Table 7. Area, Production & Productivity of Major Horticulture Crops of Palakkad District

Year Name of the crop	2006-07			2008-09			% Difference		
	Area (ha)	Prodn. (MT)	Pdctvty (T/ha)	Area (ha)	Prodn. (MT)	Pdctvty (T/ha)	Area (ha)	Prodn. (MT)	Pdctvty (T/ha)
Mango	9597	91363	9.5	8479	80720	9.5	-11.6	-11.6	0.0
Banana	19609	162531	8.3	22336	236974	10.6	13.9	45.8	27.7
Pepper	8368	1447	0.2	5661	870	0.15	-32.3	-39.9	-25.0
Ginger	1762	8651	4.9	1044	4492	4.3	-40.7	-48.1	-12.2
Turmeric	923	2856	3.1	528	1396	2.6	-42.8	-51.1	-16.1
Cashew	5094	1980	0.4	3740	1750	0.5	-26.6	-11.6	25.0

Among the horticulture crops covered under NHM, maximum area in Palakkad district is under banana followed by mango.

The main crop identified for developments in Palakkad district include banana, mango, spices and floriculture.

There has been improvement in the area and production of banana in the district whereas most of the other crops have registered a decline.

Interventions

NHM activities were taken up in Palakkad district since 2005-06. The main interventions in the District include planting material development, area expansion, protected cultivation, creation of water resources, Bio Control Lab. Yearwise details of investments made in the district are given in **Table 8**.

Table 8. Investments made under NHM in Palakkad District

Year	Amount (Rs. in lakh)		Main activities
	Release	Exp.	
2005-06	71.50	27.18	
2006-07	463.75	209.44	Area expansion, rejuvenation.
2007-08	400	442.23	Area expansion, BCL, PHC, HRD
2008-09	300	363.49	Area expansion, rejuvenation
2009-10	700	682.62	Area expansion, rejuvenation, protected cultivation.
2010-11		188.85	Area expansion, rejuvenation, HRD, Model Floriculture unit.
2011-12 (Till June)	193.00	79.62	Area expansion, rejuvenation, HRD
Total	2128.3	1993.4	

JIT visited the Nellyampathy Block of the district to see the progress under the Model Floriculture Centre and Organic Farming activities at POABS. The Block has an altitude of about 5000 ft. above MSL.

Deputy Director of Agriculture (H) and Farm Incharge of Govt. Orange & Vegetable Farm, Nellyampathy were also present.

Observations

1. Model Floriculture Unit established at Nellyampathy needs to be monitored properly. The unit has been established through NERAMAC by involving a Delhi Based firm viz. Steel Biotech Ltd. There has been high mortality of the Gerbera plants produced through Tissue Culture due to poor internal drainage in the shade net house. While the funding was being done directly by the SHM HQ at Thiruvananthapuram, the District Officials were not aware of the objectives of the project. They were also not aware of the varieties of planting material being planted under protected cover.

2. The model nursery under establishment at Govt. Orange & Vegetable Farm, lacks proper lay out plan. Mother plants have been supplied directly by SHM HQ without indicating the varietal details and characteristics.
3. The BCL established by POABS with an assistance of Rs. 20.00 lakh is producing *P-fluorescence* and *T. Veride*. The unit has been well maintained and has realized an income of Rs. 70.00 lakh.

The Team Leader had visited the Attappady Block of Palakkad District during 20-23 July, 2011 along with another Team to study and scope for horticulture development in the Block, in continuation of the developmental works taken up by the Attappady Hills Area Development Society (AHADS) under a World Bank Project. Observations and recommendation in the regard is appended at **Annexure II**.

GLIMPSES OF ACTIVITIES VISITED BY JIT IN PALAKKAD DISTRICT



Shri Abraham Jacob, MD POABS, Nellyampathy explains the functioning of Bio Control Lab, which has been set up in the Private sector.



View of the shadenet house and Mist House at the Model Floriculture Unit, Govt. Orange & Vegetable Farm, Nellyampathy. Shadenet required replacement. Mist house is to be commissioned.



Planting material, which has been supplied for developing Sion bank in the Model Nursery.



A processing unit is also functioning at the Farm.

Centre for Perishable Cargo, Cochin International Airport Ltd.

The Centre for Perishable Cargo at CIAL was approved as an innovative project during 2007-08 involving an NHM assistance of Rs. 1459.00 lakh (25 % of total project cost of Rs. 5836.00 lakh) to handle a capacity of 25,000 MT of perishable commodities, annually, mainly fruits and vegetables being exported to the Middle East Countries. Cost Breakup for the CPC is as follows.

Cost Break up	Rs. In lakh
I. Centre for Perishable Cargo	2363.00
II. Allied Infrastructure facilities	
a) Cargo Freight Parking Bay	400.00
b) Equipment for handling Cargo freight	873.00
c) High Resolution X Ray machines	500.00
d) Plant quarantine station and IATA agents building	200.00
e) EHT sub-station	400.00
f) IT enabled services	100.00
g) Container parking station	500.00
h) Land for allied infrastructure (10 acre)	<u>500.00</u>
Sub total	<u>3473.00</u>
Grand Total	<u>5836.00</u>

A sum of Rs. 1320 lakh was released to the SHM during 2007-08 who in turn has released Rs. 1000.00 lakh to CIAL.

JIT visited the CPC on 4.8.2011 to see the progress of installation. Shri C.K Koshy, OSD, CIAL was present.

During the time of the visit it was observed that fruits and vegetables being exported through different airlines were being screened through X Ray machines and loaded in containers.

The Cargo Freight parking bay has been constructed and the equipments have been purchased. High Resolution X Ray Machines have also been purchased, which is under installation.

Space for Plant quarantine station has been provided but Staff from Directorate of Plant Protection Quarantine are yet to be posted. Mr. Koshi mentioned that since the Directorate is short of staff, they have advised to provide staff from State Govt. or VFPC, who could be trained for the purpose. The matter is, however, pending.

Equipments for ETH sub station have been procured and installed. However, the power supply to the sub station is yet to be provided by KSEB. The sub station will cater to the airport complex.

Facilities for IT enabled services have been created where the customs officials have been posted. The facility enables to register the export consignment from any part of the country through the web, based on which a unique registration number is generated, which is to be produced at the CPC along with the export consignment.

Site for container parking states has been located and is under development.

It is proposed to develop the complex into a airport village by integrating road, rail and water way, which are all located within the vicinity of the CIAL Complex.

GLIMPSES OF ACTIVITIES VISITED BY JIT AT CIAL



Shri C.K. Koshi, OSD, CPC CIAL explains the functioning of perishable cargo complex at Cochin International Airport.
Fresh vegetables are packed in net bags for aeration.



X Ray machine for screening the consignment



Newly commissioned Bay on the runway side



IT enabled services for on-line registration of export consignment



ET Substation - ready to be charged

Status of project on Vegetable Initiative in Urban Cluster- Thiruvananthapuram

The NVI Scheme was formally launched by the State Agriculture Minister at Thiruvananthapuram on 2nd August, 2011. Shri Suresh Rawat, Chief Consultant witnessed the inaugural ceremony. Status with regard to the NVI project, as provided by the SHM, Kerala is as follows:

1. Thiruvananthapuram, the capital city of Kerala has been identified as the supply point.
2. A pilot team was constituted for preparing the detailed project report of vegetable initiative for Urban clusters in Thiruvananthapuram with a total cost of Rs. 1643.45 lakh and Government assistance of Rs. 1088.06 lakh. The project report was submitted to the PPM Cell, Govt. of Kerala and the State Level Steering Committee, Chaired by Chief Secretary, Government of Kerala has approved the project.
3. An end to end approach covering all the aspects right from assessing the bottle necks, identification of clusters/ beneficiaries, organizing them providing HR support, making available good quality inputs, procurement, distribution and marketing of produce is proposed to be adopted for the successful implementation of the project.
4. Cultivation of ethnic vegetables and minor tubers will be done by the farmers on commercial basis under the project. Emphasis will also be given for homestead vegetable cultivation. Roof top cultivation will be given top priority. Cultivation of cool season vegetables like cabbage, cauliflower and carrot will be taken up under the project during winter season. Mushroom cultivation will be carried out through selected groups.
5. The project will be implemented by the SHM-Kerala with the support of Department of Agriculture, VFPC, Schools, Self Help Groups such as Sangamythri, Janasree, Kudumbasree, Resident's Associations, NGO's and various institutions.
6. Out of 200 clusters targeted in the project, 125 farmer clusters have already been formed at Krishi Bhavan level and through VFPC and NGOs.

7. 30 Schools have been identified for establishing School vegetable Gardens and action has already been initiated for training the students and for starting cultivation.
8. Roof top cultivation of vegetables is proposed to be taken up in 15,000 house hold of Thiruvanthapuram Corporation and 4 Municipalities. 25 grow bags planted with vegetable seedlings will be given to each house hold. The beneficiaries will be given training on organic cultivation of vegetables. Karshika Karma Sena, and Tabs Greentech, two voluntary organizations will support the SHM in implementing this component.
9. Indents have been placed for production of 6, 00,000 vegetable seedlings to be distributed in the project area will be produced by VFPCCK and Department of Agriculture. They have already established seedling nurseries and these seedlings will be used for different components under the project.
10. Indent has been given to VFPCCK and Department of Agriculture for vegetable seeds of different varieties for distribution under the project. Hybrid vegetable seeds will also be distributed by Vegetable and Fruit Promotion Council Keralam.

The project was launched Shri K.P Mohanan the Hon'orable Minister for Agriculture & Animal Husbandry on 02.08.2011 at 5.00 P.M at Kankakunnu Place, Thiruvanthapuram. Minister for Transport Sri V.S Sivakumar inaugurated the distribution of planting materials. The function was presided over by Shri K. Muraleedharan, MLA. Smt. K. Chandrika, Workshipful Mayor, Thiruvanthapuram, Sri V. Sivankutty, MLA, Sri M.A Vahid, MLA, Smt. Remani. P. Nair, President, District Panchayat and Dr. P. Rajenderan, Director, PPM Cell were Guests of Honour at the function.

LAUNCHING CEREMONY OF NATIONAL VEGETABLE INITIATIVE AT THIRUVANANTHAPURAM



Shri K.P Mohanan, Minister for Agriculture & AH formally launched the scheme.



Annexure II

Recommendations relating to Horticulture Development in Attappady Block based on visit made by Team during 20-23 July, 2011

Attappady is a revenue block in the Palakkad District of Kerala comprising of total area of 74,500 ha of undulating terrain, the altituted ranging between 430 m to 2300 m above sea level. Out of the total area, about 17,000 ha is total cropped area. The area under horticulture presently is about 12000 ha. The major area is under fruits & vegetables. Spices and plantation crops like cashew are also being grown. Summary details of area and under horticultural crops in Attappady Block is given below:

Sl. No.	Crop	Area (ha)
1.	Fruits	4211
2.	Vegetables	1909
3.	Tuber crops	1175
4.	Spices	3913
5.	Floriculture	50
6.	Medicinal & Aromatic plants	91
7.	Cashew	750
	Total	12099

Details of area under different crops is given in **Annexure**.

Activities under the National Horticulture Mission (NHM) were initiated in Attappady since the year 2005-06. The physical and financial details of the activities taken up under NHM in Attappady Block is given below.

Physical in ha/No., Financial Rs. in lakh

Sl. No.	Activity	2005-06		2006-07		2007-08		2008-09		2009-10		2010-11	
		P	F	P	F	P	F	P	F	P	F	P	F
1	Establishment of Model Nursery					1	7.44						
2	Establishment of New Garden											55	14.43
	Ginger	30	3.37	50	5.62	7	0.82	46	5.19				
	Aonla			140	15.78	22	1.56	62	7.00				
	Banana			573	43.01	200	15	115	8.62	300	22.5		
	Pepper			173	9.32					64	1.43		
	Cashew			200	3.25	50	0.81						

	Ginger												
	Turmeric							5	0.61				
	Cocoa							27	0.82	1.99	11.46		
	Maintenance						15.02		3.37		2.31		
3	Creation of water Resource	3	3	37.53	30.40					85.00	47.07		
4	Protected cultivation												
5	INM/IPM												
	Ginger	10	0.1										
6	Organic Farming												
	Banana	135	13.5									55	14.44
	Pepper												
	Cocoa									199			
	Pineapple											0.8	0.06
	Cut flower											4	1.26
7	Vemi compost unit									3	0.9		
	Banana			3	3.54	22	5.7						
8	Mushroom cultivation									1	0.06		
9	Rejuvenation					9.64	1.18						
10	Market										1.00		
11	Pollination Support												
12	SHM									1.07			
13	Horticulture Mechanism									64	2.39		
	Total		19.97		110.92		47.53		26.68		89.12		15.76

Recommendations

1. Almost 70% of the cropped area in Attappady Block is under horticultural crops. Hence, there is good potential for promoting horticulture as an income generating activity in the Block.
2. NHM has been under implementation since 2005-06 and so far a sum of Rs. 3.1 crore has been spent a various activities. There is scope for upscaling the investments under horticulture in the Block.
3. Banana appears to be the mayor attraction for cultivation in Attappady. Presently about 3500 ha in under banana, constituting about 29% of the area under horticulture. There is good scope for promoting the crop in conjunction with Tissue culture and micro irrigation, which would help in enhancing productivity and quality of crops.

4. Banana is also a major attraction to the wild animals, particularly elephants, in the area. Therefore, cultivation will have to be taken up in areas sufficiently far away from the forest areas and areas frequented by wild elephants.
5. Root and tuber crops are being grown extensively in the area. There is scope for promoting organic farming of vegetables including R&T crops in the area.
6. Creation of water resources has been a major factor in transforming the economy of the local people. NHM provides for taking up water resource development as a community based activity as well as in individual fields, which need to be promoted in conjunction with drip and sprinkler irrigation.
7. Income generating activities such as vermi compost units and Beekeeping need to be promoted.
8. Capacity building through HRD, training and demonstration will have to be taken up extensively, particularly for training the tribal farmers in adopting modern technologies.
9. Production related activities should go in conjunction with post harvest management and marketing. This would call for private investments in accordance with the NHM cost norms.
10. Looking into the Socio economic background of the local population they would require hand holding to take up horticulture ventures for which dedicated trained manpower should be available for a period of three years.

Annexure

Area under Different Crops in Attappady

SI No	Particulars	Area(Ha)
1	2	3
A	Cereals & Millets	
1	Rice	90
2	Maize	410
3	Ragi	190
B	Pulses	
1	Black Gram	145

2	Ciwpea	405
3	French Beans	10
4	Green Gram	20
5	Green Peas	2
6	Horse Gram	207
7	Red Gram	600
8	Soyabeans	15
C	Tubers	
1	Amorphophailus	250
2	Colocasia	220
3	Greater yam	115
4	Lesser yam	70
5	White yam	30
6	Sweet potato	15
7	Tapioca	385
8	Coleus	90
D	Commercial Crop	
1	Cashew	750
2	Cotton	230
3	Rubber	70
4	Surgane	35
E	Oil Seed Crops	
1	Coconut	1580
2	Groundnut	395
3	Oil palm	2
4	Sesamum	10
F	Spices & Condiments	
1	Cardamom	510
2	Cinnamon	175
3	Clove	95
4	Vanilla	76
5	Ginger	675
6	Nutmeg	177
7	Pepper	1825
8	Turmeric	355
9	Tamarind	25
G	Beverages & Stimulents	
1	Areanut	1335
2	Cocoa	490
3	Cofee	1153
4	Tea	110
H	Vegetables	
1	Amaranthus	157
2	Okra	210
3	Bitter ground	140
4	Snake ground	57
5	Cucumber	62
6	Water Melon	70

7	Bottle gourd	60
8	Pumkin	77
9	Ash gourd	63
10	Brinjal	150
11	Chilli	315
12	Tomato	485
13	Cabbage	21
14	Cauliflower	21
15	Carrot	16
16	Beetroot	5
I	Fruits	
1	Banana	3500
2	Guava	55
3	Gooseberry	285
4	Jack	300
5	Orange	25
6	Papaya	21
7	Pineapple	10
8	Sapota	13
9	Cherry	2
J	Ornamental Plants	
1	Anthurium	0.2
2	Orchid	0.2
3	Jasmine	50
K	Medicinal Plants	
1	Eucalyptus	37
2	Kacholam	2
3	Lemon grass	2
4	Vetiver	3
5	Chethikodivali	1
6	Chittaratha	0.2
7	Ashoka	3
8	Thippali	2
9	Neem	5
10	Padhomugam	22
11	Chittadalotakam	2
12	Koovalam	5
13	Thulasi	5
14	Kattarvazha	2
L	Fodder Crops	
1	Maize	65
2	Sorghum	61
3	Hybrid Naiper	158

Source: Assistant Director, Horticulture, Agali, Attappady