

Report of Joint Inspection Team to Review National Horticulture Mission and other Central Scheme of Horticulture Supported for Uttar Pradesh for the year 2011



National Horticulture Mission
Department of Agriculture and Cooperation



Maharajganj



Basti



Kushi Nagar



Gorakhpur



St. Kabir Nagar



Balia

Joint Inspection Team to Review National Horticulture Mission and other Central Scheme of Horticulture Supported for Uttar Pradesh for the year 2011.

The Joint Inspection Team (JIT) to visit and monitor the centrally sponsored programmes for Horticulture Development comprises following members:

S.No.	Name & Designation	Address
1	Dr. R.C.Upadhayay Chief Consultant, NHM	Ministry of Agriculture, Government of India Krishi Bhawan, New Delhi
2	Dr. A.K. Dubey Associate Professor Horticulture	CSA University of Agriculture & Technology, Kanpur, Uttar Pradesh
3	Dr. Bhagwan Deen Associate Professor Horticulture	N.D.University of Agriculture & Technology, Faizabad, Uttar Pradesh
4	Dr. V. K. Singh, Principal Scientist (crop production),	CISH (ICAR) Rahmenkhera, Kokoni, Lucknow 227107(U.P)
5	Joint/Deputy Director Horticulture and District Horticulture Officers of concerned districts	Department of Horticulture and Food Processing, Government of Uttar Pradesh

JIT Visit Schedule:

JIT interacted with concerned officials of U.P. Government, Uttar Pradesh Council of Agricultural Research, Lucknow representative, beneficiary farmers, entrepreneurs, NGO representatives, KVK scientists, *Door Darshan* Team and visited the farmers fields randomly selected by the JIT as per following schedule:

Date	JIT Activities
23 rd and 30 th September, 2011	Meeting with Uttar Pradesh Council of Agricultural Research, Lucknow representative as well as State Govt. Officers at Directorate of Horticulture & Food Processing, Udyan Bhawan, Lucknow to discuss and interact on pre and post visit issues.
24 th to 26 th September, 2011	Visit to Basti, Sant Kabir Nagar, Gorakhpur and Maharajganj districts, interaction with farmers, entrepreneurs and KVK scientists of concerned district on technical, managerial and financial issues of NHM and other programmes.
27 th to 29 th September, 2011	Visit to Kushinagar, Deoria and Balia districts, interaction with <i>Door Darshan</i> Center Gorakhpur, farmers, NGO representatives, entrepreneurs and KVK scientists of concerned district on technical, managerial and financial issues of NHM & other programmes.

On 23rd Sep., 2011 a JIT meeting was held in the office of the Director Horticulture and Joint Director, Nodal Officer SHM, Govt. of U.P., Lucknow and discussed issues related to response on action taken report and issues related to visit to district of Eastern U.P.. The team also reviewed the progress of work done including financial details including release of funds. JIT also discussed regarding issues in Eastern U.P. and progress made so far and field visit programme of few selected sites at Basti, St.Kabir Nagar, Gorakhpur, Maharjganj, Kushinagar, and Ballia.

Agenda of Meeting:

- Crop specific cluster at district level.
- Nurseries management and progress including accreditation of nurseries.
- Vermi compost units under SHM.
- Flowers and vegetable production under protected conditions.
- Timely release of budget for better and timely utilization
- Micro irrigation scheme and use of plastic in mulching, irrigation and precision farming.
- Shortage of technical Staff at Management and also at field Level.
- Other activities and support from KVK, s.

Financial Progress: (Rs. in lakhs)

Year	Outlay	Release	Exp.
2005-06	11519	5340.25	552.98
2006-07	12398	6287.27	3341.49
2007-08	17865	13826	7703.06
2008-09	16966	11980	10000.81
2009-10	13502	10898	12754.45
2010-11	12500	8496.71	6618.90
2011-12	12000	2234.89	727.65

Common Observations and Suggestions of JIT:

JIT has recorded following common observations on implementation of centrally sponsored Horticulture development programmes in the visited districts during 23rd October to 30th October, 2011:

- A large number of projects have been sanctioned to State Agriculture Universities and the implementation of these projects is very slow. It is observed that support to SAU.s, ICAR and other institution is provided through U.P. Council of Agriculture Research (UPKAR), Lucknow and projects sanction is issued for one year and financial allocations are given later part of the year . UPKAR needs sanction for extension again and again for each year which takes lot of time. It is therefore, suggested that the projects may be sanctioned to research based organizations for at least two to three year to complete the infrastructural work and progress may be monitored regularly .**
- JIT observed that district level officers preferred area expansion programmes only of NHM. JIT has a view that more attention should be given on vermi-composting, bee keeping, rejuvenation, mechanization, protected cultivation, and nursery establishment etc. in future. The cluster approach should be followed in area expansion activities. The entire production cluster needs to be linked with PHM & marketing infrastructure.**
- The visited districts fall under trai region of the Eastern U.P. where agro climatic conditions are congenial for banana cultivation. Farmers are cultivating robusta and compearganj local varieties of banana. There is need to give more emphasis on replacement of these cultivars by tissue cultured plantlets of Var.Grande Nane. JIT suggested that emphasis may be given on area expansion in litchi, Banana and guava along with bee keeping in the visited districts under NHM. Farmers should be advised to go for intercropping of legumes or vegetables in the newly established orchards to sustain regular income.**
- Overall progress of implementation of the NHM programme in these five districts of Eastern U.P. is slow except for area expansion programme for tissue culture Banana Var. Grand Nene. Therefore, more attention is required for area expansion programme for other fruit crops at District level, considering the potential for horticulture development in respective districts.**
- It was observed by JIT that nurseries established at private / public sector needs proper care and maintenance. These nurseries should be properly leveled with Varieties, date of sowing seeds, date of grafting and method of grafting etc. and should be accredited by National Horticulture Board.**

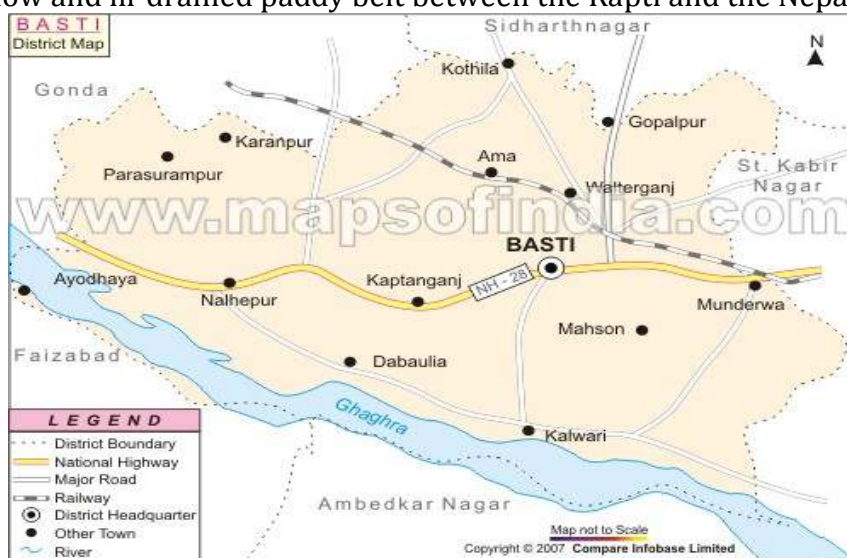
- There is unusual practice adopted by farmers to establish mango orchard in the paddy fields. JIT observed during interaction with farmers that farmers were unaware about the demerits of such practice. It also indicated that technical staffs of District Horticulture Department did not advise and trained to farmers. JIT advises to arrange proper training on this problem to the farmers selected under the NHM.
- JIT found that rejuvenation of old orchards of mango programme has been diluted to the extent of simple pruning of mango orchards. This is serious matter of technical concerned and JIT could not see a single rejuvenated old and declined mango orchard in the field. Rejuvenation/Replacement of Senile Plantations is urgently needed, since less than 10% of the area has been rejuvenated out of 60% old plantations of Mango, Guava, Litchi and Aonla of decline and senile orchards in U.P..Therefore, rejuvenation programme may be initiated in large areas on priority basis which will increase production and productivity of fruit crop. The problems faced by the farmers related to lack of awareness of rejuvenation. There is an urgent need to train the farmers and also provide assistance under horticulture mechanization for scientific management of senile orchards and regular supervision in field.JIT therefore advises to post Horticulturists in NHM cell at Directorate of Horticulture, Lucknow to advice on technical issues.
- JIT observed that many beneficiaries were selected from the same single family by the District Horticulture Officers under NHM. It was also revealed that single influential farmer had benefitted under more than one programme like NHM, UPDASP, and NHB for same intervention. This practice needs to be discouraged. The new farmers should be given preference over professional benefit seekers. It is advisable that selection of beneficiary must be done from different families and different section of society like SC, ST, Minorities and Women farmers.
- Although visited vermi-compost units were found functional but in the construction of vermi- compost pits recommended technical standard were not followed. There is need to follow recommended technical standard in construction of vermi-compost units.
- Looking into the technical man power at District, JIT observed that Horticulture Supervisors, who was supposed to supervise field work at grass root level with the farmers , had been made in charge of individual scheme or assigned some other duties and asked to work at district head quarter by DHOs. In most of the cases only Malis visited farmers' fields occasionally. JIT suggests that instead making incharge of single scheme to Horticulture Supervisors they may be assigned one or more block(s) and asked to work for all horticulture development schemes of that block(s) and meet with farmers frequently.

- **JIT assessed that officers and technical staffs including gardeners were not up to date with latest techniques and knowledge of Horticultural aspects. It is therefore advised to arrange the refresher trainings and exposure visits for officers and technical staffs at ICAR/CSIR institutions, SAUs and KVKs.**
- **JIT observed that KVKs did not submit adequate projects to NHM. JIT therefore expresses opinion that KVKs should submit projects based on the needs of their districts under NHM and state director of horticulture mission should give priority to KVKs project proposals. KVKs may include FLDs and GAP based training in its project proposals. Technical guidance on recommended varieties and technologies from State Agriculture University centers, PFDC units, ICAR Institutes and Krishi Vigyan Kendra may be taken for implementation of field activities. KVK, Basti and KVK (IVRI), Sarkatia , Kushi Nagar are having good training infrastructures and technical support to impart trainings to the field level functionaries. It is also suggested that interface meetings may be organized with KVK authorities to establish fruit nurseries and seed production units at KVK, s.**
- **It is recorded that there are about 70% posts of District Horticulture Officers are lying vacant and senior horticulture inspectors are posted as acting DHO,s . There is serious shortage of field functionaries and hardly 3-4 horticulture inspectors are posted at district level for monitoring of more than 14-20 blocks. It is therefore suggested that horticulture inspectors are to be placed rationally at each district.**
- **It is observed that monitoring field activities are lacking at district and block level. Therefore, it is suggested that team may be constituted to monitor the field activities under the leadership of Deputy Director Horticulture of the respective divisions along with KVK experts and related field staff. Quarterly reports may be submitted to the Nodal Officer, SHM. The team may also supervise for implementation of Micro Irrigation scheme with convergence of horticultural crops.**
- **More projects needs to be submitted for creation of PHM and Marketing infrastructures. Efforts should be made by SHM to promote ripening chambers for banana.**
- **For smooth functioning of the NHM programme, there is urgent need for creating a batch of dedicated staff with electronic connectivity for rigorous monitoring and coordination with District authorities and NHM. SHM officers should regularly visit the project area in the field for inspection & verifications.**

- To ensure transparency in implementation of various activities under NHM, details about the activities approved in the village, cost of work, subsidy available, name of beneficiaries, area covered and year of implementation needs to be displayed at the block level. Proper sign board with NHM logo indicating the name of beneficiary, activity, cost, assistance provided, year, etc. needs to be displayed at each work site.
- Slow pace of progress has been observed for the component of protected cultivation of vegetables and floriculture. Protected cultivation may be given priorities for development of high tech. horticultural development. It is therefore suggested that cluster of vegetable production and cut flower production under protected conditions may be taken up on priority basis. The farmers may be provided training on management of green house, poly house, shade net, plastic tunnel, mulching for high tech. horticulture technology in respect of higher productivity of horticultural Crops. It is therefore, suggested that the farmers may be provided proper training for proper utilization of such infrastructure facilities.
- Front line demonstration may be taken up on Bee production in specific horticultural crops to understand the role of Bee's as pollinator which helps in increasing the crop yield. The farmers may also be trained in the art of handling bees, transferring the hives and extraction of honey.
- JIT observed that the expenditure till date is much less than the budget allocated for annual plan of Rs.10000 lakh which is only 37.55%. Therefore, it is suggested that efforts should made to timely utilization the budget allocated to the State from NHM.
- The annual report of the NHM programme and success stories of various NHM interventions needs to be submitted to DAC at the earliest.
- Farmers are not aware of recommended package of practices of horticultural crops. Therefore, Farmers may be provided hand outs of specific technical knowledge and provided regular training or awareness programmes. The farmers may be exposed to the areas where such crops are grown on commercial scale.
- JIT suggests that procedure delay in allotment and release of budget to districts should be avoid by the concern as for as possible.

District Basti:

The district lies between the parallels of 26° 23' and 27° 30' North and Latitude and 82° 17' and 83° 20' East longitude. The district covers an area of 3033 km² and 2,461,056. The district lies between newly created district Sant Kabir Nagar on the east and Gonda on the west on the south, the Ghaghra river separates it from the Faizabad and newly created district Ambedkar Nagar. While on the North it is bounded by district Sidharth Nagar. Basti district is having 13 Development Blocks, 139 Nyay Panchayats, and 10 Gram Sabhas. The district divided into the low valley of the Ghaghra in the south, extending from that river to its tributary, the Kuwana; the central upland and the low and ill-drained paddy belt between the Rapti and the Nepal boundary.



Climate: Temperature during the winter season the mean minimum temperature is about 9°C and the mean maximum temperature 23°C. During the summer, the mean minimum is about 25°C and the mean maximum about 44°C. Humidity in the southwest monsoon and post-monsoon seasons the relative humidity is above 70%. The average annual rainfall of the district is 1166 mm. Winds are in general very light, with a slight increase during the late summer and monsoon seasons. The average annual wind speed ranges from 2.0 to 7.1 km/h.

Agriculture: The district is primarily agrarian with 75.1% of the geographical area under cultivation. The net sown area is around 2.09 lakh ha with 1.31 lakh ha under irrigation. More than 85% land holding is less than 1 ha in size despite continued fragmentation of land holding the core sector of economy continues to be agriculture. Major horticultural crops are Potato, aonla, guava, Banana and mango. Including the seasons, a total net cropped area of 209644 hectare is put under various crops in district of Basti in a year. Only about 63.26% of the net cropped area is irrigated. Small and marginal framers hold about 70% of the land. The districts cold storages capacity is of 43913 MT while the total production of food grains is 546284. So, there is need to create additional storage capacity as the cold storages. The major constraints being faced in the development of the district are the non availability of essential inputs, such

as quality seeds, fertilizers, quality pesticide and insecticides, veterinary services, and power supply. Some of the suggestions for improving linkages in various sectors include provision of timely and sufficient agricultural inputs such as seeds, fertilizers, pesticides. There is greater need of planning to minimize the losses from flood.

Joint Inspection Team visited KVK, Basti nursery and research farm which is working under the leadership of Dr. R.P. Yadav. KVK, Basti is having all the infrastructures to provide practical training to the farmers and suggested to utilize their services on technological interventions. JIT also visited Govt. Research station, Basti which is headed by Dr. R.P. Singh, Joint Director Horticulture; Govt. of U.P. Dr. Singh briefed the team of research station activities. The station is having dedicated team of research officers who are supporting the training programmes. Station is also maintaining fruit Nursery. Seedlings are healthy, but needs proper leveling and fencing, since field are often damaged by monkeys. Team made few suggestions to take up some adoptive field experiments with special reference to the Mango rejuvenation programme of old orchards and high density orcharding of guava, mango and litchi. Team also visited some farmers field of Banana plantations and vermin compost units. It is realized that DHO incharge hardly visit the field and unaware of the activities adopted under NHM scheme.

Farmers' fields visited:

- Mr. Ram Chet, Village-Padri- Banana Plantation
- Mr. Wasim, Village- Padri- Vermi-compost unit



Vermi compost unit at Lahura Deva of Mr Wasim Mango Propagation at HRTC, Basti

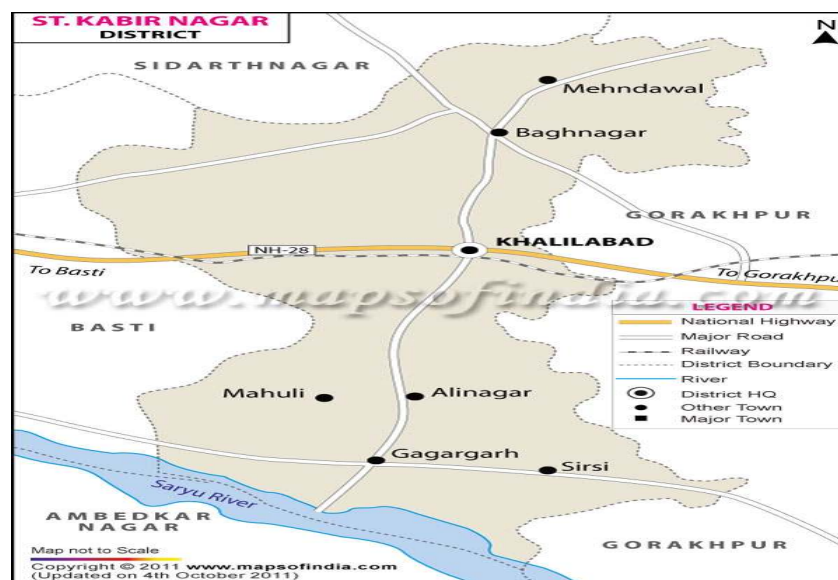
Observations:

- **Training and technological support may be taken from KVK,Basti ,since they are having good field facilities to provide proper training to the farmers. The KVK may take up some FLD programme on protected cultivation.**
- **It has been observed that field functionaries hardly visit the fields and farmers are not provided technological knowhow. DHO and horticulture Inspectors may regular visit the programmes adopted for horticulture development in the district under various schemes.**
- **There is more need to train the farmers about construction and working of vermi compost units.JIT also advises to execute vermin-compost intervention in vegetable growing areas.**
- **Keeping the quality regarding capacity building of farmers through training JIT suggests that in place 1 or 2 days training conducted By District Horticulture Officers the training of minimum 6 days duration should be conducted at SAU/ICAR institutions only.**
- **The Horticulture Research and Training Center (HRTC), Basti which is run by State is propagating planting materials of mango, aonla, guava, litchi etc. JIT opines that efforts should be done by Joint Director Horticulture Basti to get nursery accredited within a year. There is also need to maintain mother plants properly and also to plant new mother block.**
- **JIT expresses his displeasure on inability of DHO to show adequate numbers of farmers' fields to JIT.**

District Sant Kabir Nagar:

The district was created on September 5th 1997 and named after 15th century poet, sant and social reformer Sant Kabir who lived in the Maghar town of the district till his death. The district has total geographical area of 1641.40 sq. km and comprises 9 development blocks. It has 2 river systems viz. Ghaghra and Rapti with other streams like Kuwana, Rawai, Manwar, Katneha and ami. Topographically district is divided into 2 distinct tracts namely the low valley of the Ghaghra and the low and poor drained paddy belt between Rapti and other streams. The soil is mainly alluvial with sandy loam

to loam texture. The main horticultural crops of the district are mango, banana, bamboo and potato.



Profile of the District:

Total land area:	160793 ha.
Uncultivable Lands	2998 ha.
Orchards	2152 ha.
Cultivable waste lands:	2496 ha.
Net sown area:	121994 ha.
Annual rainfall	1166 mm
Temperature range:	9°C to 44°C
Branches of Banking Institutions	39 no.
Cold Storage	5 no

Farmers' fields visited:

- Mr. Satya Prakash of village Boundra block Pali maintained vermicompost unit at his field. He has also providing saplings of fruit plants to other farmers on cost basis. He was also suggested to maintain Poly- and Net –house nursery.
- Sri Govind Shukla of village Munda-Kundra block Shajanvoan sown turmeric variety Narendra Haldi-1. He was also suggested by the team for rejuvenation of 50 years old mango orchard under NHM programme.
- Sri Digvijay Singh of village Harpur block Jungal Kauria maintained litchi orchard developed under NMH programme. He has also made vermicompost unit. Mr. Singh also suggested by the team to take opportunity of bee-keeping for honey processing unit through NMH.

- **Ser Singh** of Jindapur village established very good banana plantation of one ha as saplings provided by Horticulture functionaries of the district. JIT visited to the fields of **Shri Ram Nath** of village Sharheria, **Sri Kchitij Kumar** village Kanthganga for newly established orchard of mango variety Dushari.
- New area expansion of litchi observed in the village Bairvyas of Smt. Prabhawati w/o Satyaendra Raj Verm, **Sri Rautta Ullaha Khan** of village-Chhibra block Santha.
- Some new vermicomposting Units of block Santha were also seen by the team.
- **Mr. Ram Dev Chaudhary**- village- Sehri, Bock- Sameryana-1 power.
- **Mr. Kshitij Kumar Chaudhary**, village-Kanthganga- 0.4 ha mango.
- **Mr. Sana Ullakhan**, village-Chhibra, Bock- Santha-0.4 ha Litchi.
- **Mr. Akhand Pratap Singh**, village- Harryain- rejuvenation of mango
- **Mr. Dhrub Chand Maurya**, village- Totaha, Block-Satha-Vermicompost unit

Site photographs:



Guava orchard of Ram Dev Chaudhary



Discussion about intercrops in orchards



Mango orchard of Sri K.K. Chaudhary



Vermi Compost unit of Sri.D.C. Maurya

Observations:

- JIC observed that farmers established orchards in paddy field, which is not desirable and also not a recommended practice. It should be avoided and discouraged.
- The rejuvenation has been diluted to light pruning of mango plants that is not fulfilling the objective of rejuvenation of unproductive old mango orchards and only recommended practices may be followed.
- Farmers are growing Robusta and other local cultivars of banana which may be replaced tissue culture plants of with Var, G-9.
- There is tremendous scope for cluster approach with appropriate technical intervention in banana, mango and guava farming.

Gorakhpur District:

Gorakhpur lies between latitude 26° 46' N and longitude 83° 22' E, covers the geographical area of 3483.8 Sq. km. District has a population of 376.94 lakh people. It is bounded by districts Mahrajganj in the north, Ambedkar Nagar, Azamgarh and Mau in the south, Kushinagar and Deoria in the east and Sant Kabirnagar in the west. The district is divided into 7 tehsils, and 19 community blocks. The main rivers of the district are Rapti and Ghaghra. Besides, Rohini, Ami and Kuwana river flow through this district. The southern portion of the district is low-lying and most affected by floods and water-logging in rainy season. Soil is usually sandy and an early rain mostly damages crops. There are extensive irrigation facilities in the district. Again in the great rice tract of the north, irrigation is not needed except for the late rice, which is watered by means of channels from the streams. District is having 336223 ha. area under agriculture and net sown area is 260439 ha. (77.5%). For irrigation purpose the district has a network of canals tubewells and minor irrigation works like pakka wells fitted with pumping sets and persian wheels.

Gorakhpur falls in the eastern sector of the Indo Gangetic plain whose two types of alluvial soils, Older (bangar) and New (khadar). In the Central part of district, the soils are highly calcareous and Soils in the Tarai area have developed under sub-humid climate and high water table conditions. The parent material is medium to loose textured alluvium. Bangar soils varying from loam to sandy loam. soil survey organisation of the State carried out a soil survey of the district in and found the soils deficient in nitrogen and phosphorus content. In the bangar the nature of the crops depends on the composition of the soil. It was estimated that a total area of nearly 75.000 hectares of land is affected or threatened by the soil erosion in the district in some form or other. Mango occupies the most important place in the district and Banana is another important fruit.



Gorakhpur at a glance:

Geographical Area:	3483.8 sq. km.
Population Density (Persons / Sq. Km.)	1134
Decade Growth of Population (1991-2001)	23.44%
Total Population (2001)	3769456
Cultivators (1991)	340862
Agricultural Laborers (1991)	248963

Farmers' fields visited:

- Mr. Satya Prakash of village Boundra block Pali maintained vermicompost unit at his field. He has also providing saplings of fruit plants to other farmers on cost basis. He was also suggested to maintain Poly- and Net -house nursery.
- Sri Govind Shukla of village Munda-KUndra block Shajanvoan sown turmeric variety Narendra Haldi-1. He was also suggested by the team for rejuvenation of 50 years old mango orchard under NHM programme.
- Sri Digvijay Singh of village Harpur block Jungal Kauria maintained litchi orchard developed under NMH programme. He has also made vermicompost unit. Mr. Singh also suggested by the team to take opportunity of bee-keeping for honey processing unit through NMH. Sri Ser Singh of Jindapur village established very good banana plantation of one ha as saplings provided by Horticulture functionaries of the district.

- **Mr. Ram Achal Shukla, Village- Mundakarla- Turmeric 0.5 ha.**
- **Mr. Sher Singh Maurya, Village- Zindapur-Banana 1.00 ha.**
- **Mr. Ram Rksha, Village-Ram Chaura- Vermi-compost unit**
- **Mh. Hidayat Ullaha, Village-Allenabad- Mango rejuvenation**
- **Mh. Abdulla Tawab, Village-**
- **Allenabad- Mango rejuvenation**

Site photographs:



Newly Banana Plantation Var.G 9



Light pruning of mango orchards

Observations:

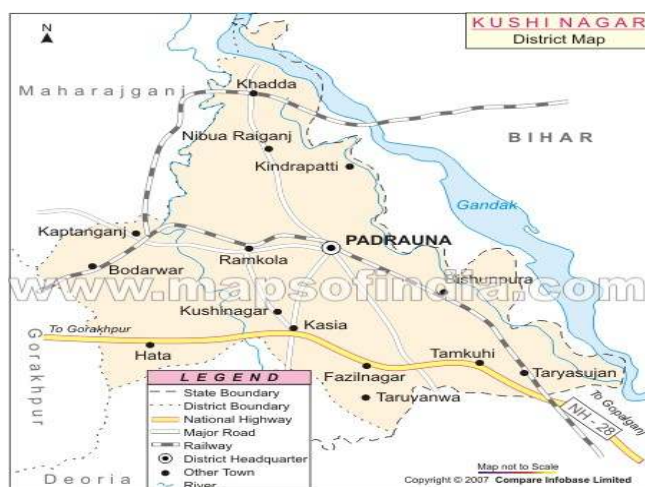
- **The vermi-compost units constructed by the contractors were not as per recommended specification and few units found to be lying nonfunctional. JIT suggests that construction must be as per recommended specification and unit should be made functional through frequent visit to the farmers fields. There is more need to train the farmers about construction and working of vermi compost units**
- **JIT recommend that rejuvenation works at demonstration level in mango growing areas should be done under the strict supervision and KVK ,Sarkatia may support on technical aspects. Such efforts would build confidence in both farmers and technical staffs of Horticulture department.**
- **Deputy Dirctor Horticulture and District Horticulture Officers may give NHM programmes on Doordarshan time to time so that more and more farmers become aware about the schemes of NHM and could get benefit from NHM.**

Kushinagar District:

Kushinagar District of Uttar Pradesh is extending from latitude 26° 45' North and 83° 24' East longitude,. Spread over an expanse of 2873.5 sq. km, With a population of 22, 35,505, Kushnigar District is flanked by Mahrajganj in the west, Gorakhpur in the southwest, Deoria in the south and Bihar in the east, respectively. Agriculture forms Kushinagar's economic backbone. The district grows sugarcane, paddy, wheat, fruits, and turmeric..The economy of Kushinagar is predominately rural, with approximately 95 percent of the population participating in agriculture as a primary occupation. Crops in the regions are mainly prepared for large scale exportation, and single crop fields tend to dominate subsistence farms in the area. Primary export crops include sugarcane, paddy, and wheat. While agriculture is the predominant economic form in the region, smaller enterprises exist in sugar mills and distilleries. Most of the money that comes into the area, however, comes from the tourism trade. Kushinagar was designated as one of the four official pilgrimage sites by Gautama Buddha. For this reason many devout Buddhists travel to the city as part of their religious development. In addition, the Buddhist religion states that Gautama Buddha was laid to rest in Kushinagar. Therefore, the city plays host to the religiously devout, as well as those who travel to the city as a historic site. With a populace of 22,35,505, agriculture forms Kushinagar's economic backbone. The district grows sugarcane, paddy, wheat, fruits, and turmeric and also contains a few sugar mills and one distillery.

Farmers' fields visited:

- JIT firstly visited to Krishi Vigyan Kendra, Sargathiya of Indian Institute of Vegetable Research, Varanasi .and suggested for hi-tech nursery development with financial assistance from NMH.
- Sri Paras Nath Singh of village-Dumahi block Dudhi established new vermicompost unit.
- Smt. Namita Singh w/o Ajay Singh village Dudhi established new litchi orchard in one ha area, all essential inputs including planting material were supplied by the Horticulture Department.
- **Rawati Devi, Village- Dudahi- Vermicompost & Rejuvenation of mango.** Suggested rejuvenation of 60 years old mango orchard under NHM.
- Mr. Ranjit Tewari of village Dudhi got the benefit of vermicompost unit under NHM.



JIT observations:

- KVK is producing vegetable seeds and fruit plant material and The JIT suggested that preferably fruit plant material and seed may be purchased from this organization by the DHOs of Gorakhpur division. On & off campus trainings may be organized at KVK for the farmers under NHM.
- JIT suggested providing support to the KVK for establishing weather forecasting unit at KVK and to establish disease testing and tissue analysis laboratories from NHM.
- The Gautam Buddha Udyan Krishak Samiti is advised to put board displaying the list of benefitted farmers.

Site photographs:



Mango nursery at KVK ,KushiNagar



Banana Plantation Var.G 9 at Sarkatia



Seedlins of fruit crops at KVK



JIT at newly constructed Pack

Maharajganj District:

The district Maharajganj came into existence in the year 1989. The source of income of majority of population in the district is agriculture. This district is bounded by Nepal on the north, Kushinagar district on the east, Gorakhpur district on the south and Siddharthnagar and Sant Kabir Nagar districts in the west. This district is part of Gorakhpur Division. The district covers an area of 2,951 km². The district has a population of 2,173,878 (2001 Census). The forest covers 11.59% of total land of the district. The district headquarters are located in Maharajganj town. According to the 2011 census Maharajganj district has a population of 2,665,292. The district has a population density of 903 inhabitants per square kilometre (2,340 /sq mi). Its population growth rate over the decade 2001-2011 was 22.61 %. Maharajganj has a sex ratio of 938 females for every 1000 males,^[3] and a literacy rate of 64.3 %. Maharajganj one of the country's 250 most backward districts (out of a total of 640). It is one of the 34 districts in Uttar Pradesh currently receiving funds from the Backward Regions Grant Fund Programme (BRGF). Maharajganj district comprises 4 tehsils: Maharajganj Sadar, Nautanwa, Nichlaul and Pherada. Maharajganj Sadar tehsil has 4 community development blocks: Maharajganj, Ghughali, Paniara and Partawal. Nautanwa tehsil consists 2 community development blocks: Ratanpur and Laxmipur. Nichlaul tehsil has 3 community development blocks: Nichlaul, Mithaura and Siswa. Pherada tehsil also has 3 community development blocks: Bridgmanganj, Dhani and Pheranda. The number of villages in this district is 1258. It is surrounded by Nepal in north, Gorakhpur district in south, Padrauna district in east and Siddharth Nagar & Sant Kabir Nagar districts in west.

Maharjganj at a glance:

Population (Census 2001)	2,192,625
- Scheduled Caste (%)	19.87
- Scheduled Tribe (%)	0.29
Number of Nyay Panchayats	102
-Number of Gram Sabha	777
Number of Villages	2,853

Farmers' fields visited:

- Mr. Abdullah and Abdul Tayib and other farmers of village Alimabad block Campierganj needed for mass rejuvenation of old mango and litchi orchards.
- Sri Satya prakash of village-Mahadeva Bujurg, block Fareinda established new mango orchard. District Horticulture Officer has also provided machinery and other inputs. However, mango orchard densely covered by Paddy crop.
- Mr. Ram Dulare Yadav- Village- Biraida- Rejuvanation of mango.
- Mr. Ganesh Dutt Pandey-village-Chainpur- Vermicompost unit
- Mr. Shamir Kumar- village- Tarkuwa Tiwari- Rejuvanation of mango

Maharajganj District:



JIT observations:

- The NHM Board should be displayed at farmer's fields showing the information about programme, area, intervention and investment.
- The payment of the vouchers of NHM should be done only after verification of a committee comprising Horticulture Inspector, DHO and Dy. Director Horticulture concern.
- There is need to adopt cluster approach rather than scattered demonstration because clustered approach attracts the businessmen which empowers farmers to get more price of their produce.
- Locally grown cultivars of banana should be replaced by Grande Nane.
- In the old orchard under shade the turmeric variety Megha-1 which resistance to leaf spot disease should be popularized in place of local varieties already grown bt the farmers.
- The KVK of the district that has got newly constructed building is advised to establish plant nursery at KVK.

Images of JIT visit:



Mango orchard established in paddy field



Pruned mango orchard under rejuvenation



Pruned mango tree trunks



Panayala (*Flacoutia jangomas*) local fruit

Ballia District:

Ballia Lies in the eastern part of the uttar Pradesh. The total area of district is 2981 sq. km. supporting a total population of 27.61 lakh. The district is divided into seventeen blocks, namely Siar, Nagra, Rasra, Chilkahar, Navanagr, Pandah, Maniyar, Veruarwari, Bansdih, Revati, Garwar, Sohaon, Hanumanganj, Dubhad, Belhari, Bairiya and Murli chapra. There are three main rivers in the district: the Ghaghra, the Ganga and the Saryu. The district is predominantly rural character 348 thousands hectare area under cultivation. A net area sown is of 217.8 thousand hectares out of which nearly half (126 thousand hectares) is sown more than once. The net irrigated area as compared to net sown area is 61 %.. Small and marginal farmers dominate the scenario of land holding. The district has potential for banana cultivation, horticulture including medicinal and aromatic crops, vermin composting, agro based and food processing industries etc. With more than 80 % cultivated area being irrigated, the agricultural potential of the district can be rated as high as 2.39 lakh cultivators are involved in this sector. Agro-climatic conditions of the district are suitable for commercial cultivation of fruits like mango, papaya, guava and vegetable crop like tomato, pointed gourd l, brinjal and gourds, flowers like rose, gladiolous, tuber crops e. g. potato, sweet potato, yam, spices like garlic, chilli, turmeric and dry land horticulture crops like ber and aonla. Agro-economic conditions of the district are also suitable for large scale production of mushrooms and commercial bee keeping.

There is 18 cold storage spreads in 17 blocks of the district with capacity of 95,696 MT and four mandi samities are functional there. The cold storages play important role in value enhancement of potato crop, check on immediate post-harvest / distress sale and providing interim finance to farmers. Besides these, the district is also having 145 rural Godowns with total capacity of 14500 MT and 36 rural markets. The

district has been covered under 'State Horticulture Mission' launched in 2005, which is a part of National Horticulture Mission (NHM) of GOI. The mission involves promotion of commercial cultivation, rejuvenation, post harvest management and marketing of commercial horticulture like mango, guava, damask rose etc.

The major constraints being faced in the development of the district are the non-availability of essential inputs such as quality seeds, fertilizers, nurseries, veterinary services, poultry hatchery unit, animal feed units, power supply, inadequate milk routes, lack of good quality animals, presence of sodic land, depletion of ground water level, inadequate forest cover, poor marketing arrangements for non farm produce, poorly development rural haats etc. Some of the improving linkages in various sector include provision of timely and agricultural inputs such as seeds, fertilizers, availability of veterinary services, reopening of old milk routes, installation of bulk milk cooling units on the milk routes, training of paravets and supply of frozen semen by NBBDs animal breeding centre in the district for improving the quality of animals, integrated system of minor irrigation and water harvesting structures, adequate supply of power, afforestation on a large scale, development of rural haats, skill and entrepreneurship development etc. Interaction with farmers reveals that extension services were inadequate. There was also a need for marketing support for agricultural produce, availability of quality inputs and uninterrupted power supply.

Farmers' fields visited

- Sri Kashi Nath Tewari of village Manpurwa block Navanagar and nearby farmers have established very good rosary of ***Damasks*** rose for distillation and ***gulkand*** making at locally available distillation unit in Sikanderpur Town of Ballia district..
- Mr. Srikant Chubey of village Ghurauli block Dubraha have very good example of mango rejuvenation in his orchard. .
- Mr. Manoj Kumar Singh s/o Sri Virendra Pratap Singh of village Ibrahimabad block Navrar planted 4.0 ha of banana variety Grande-9.
- M/s Balaji Cold Storage (Mr. S.P. Pandey & others), village Chandpur, Ballia was financially assisted by National Horticulture Mission. The cold storage have the capacity of 1, 20,000 packets of potato. Mostly farmers prefer Red skinned potato varieties for cultivation and consumption.



Observations:

- JIT observed that only area expansion programme was taken in the district. JIT therefore suggested to take more interventions like rejuvenation, bee keeping, vermin compost, and PHM etc.
- The Sikanderpur area of the district is known for cultivation of the rose for processing. The JIT advised follow cluster approach for rose cultivation with best intervention of rose varieties having better recovery. District may establish rose processing units to support market linkages to the farmers
- Shri Balaji Cold Storage, Bariya has been established and JIT observed at cold storage training may be provided on pre cold storage management of potato tubers to avoid spoilage.
- All the major fruit orchards viz. mango, guava, banana; vegetables such as pointed gourd , cauliflower, brinjal, cowpea, okra also popular in the region

Ballia District Profile at a Glance:

Geographical area (Sq km)	2981sq.km.
total population	27.61 lakh
Net sown area (000 ha)	217.8
Total cropped area (000 ha)	348.0
Cropping intensity (%)	162.9
No of blocks	17
Normal rain fall	1014mm
Agro-climatic region and zone	Upper Gangetic plains region of ` Northen plains and Mid plains zone
Net irrigated area (ha)	168823



Newly planted Banana in Chandpur Ballia



C old Storage at Chandpur,Ballia



Local processing unit (Bhatti System)



Rose plantation (Damascus roses)

Deoriya District :

List of Farmers' fields visited:

- **Raghvendra Pratap Shahi-Village- Pipra Chandrabhan- Turmeric Processing Unit**
- **IFFCO Foundation- Revenation of Guava .**
- Mrs. Genda Devi and Mr. Rajendra Yadav of village Pande Purwa, block Berhaj, rejuvenated guava orchard under the technical guidance of IFFCO Foundation unit of Kushinagar.

observations:

- The turmeric processing unit was established but was not functional. The farmers should be trained to make unit operative.

Images of JIT visit:



IFFCO Foundation rejuvenated guava Close view of rejuvenated guava plant

Uttar Pradesh:

Introduction:

Located in the Northern region of India, Uttar Pradesh has a population of 166 million, making it India's most populous state (16% of India) and occupies an area of 240, 928 sq km (9% of India) between latitude 24 deg to 31 deg and longitude 77 deg to 84 deg East.. The State covers a large part of the highly fertile and densely populated upper Gangetic plain. Shares an international border with Nepal and is bounded by the Indian states of Uttarakhand , Himachal Pradesh, Haryana, Delhi, Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand and Bihar. The state is divided into 76 districts 300 tehsils, and 813 community blocks. UP has a predominantly agrarian economy, agriculture being the highest contributor to the GSDP. Agriculture is a key contributor (66% of the primary sector) to the GSDP. Area wise it is one of the largest State of India. The state has a predominantly rural population and is the most important agricultural state of India, not only it has the highest cropped area of 25,785 thousand hectares, but it has the highest number of over 21 million farm holdings as well. The total cultivated area of the state is 166.83 lakh ha and the gross cropped area is 255.24 lakh ha. The cropping intensity in the state is 153 percent. The area sown during rabi is more compared to that in kharif. The state is the largest producer of potato in the country.

Geography and Climate:

The climatic condition of U.P. varies from temperate to tropical with alluvial and clayey alluvial soils. The soil of terai region is mostly alluvial and clayey alluvial and contains sufficient quantity of carbonic materials with the average annual rainfall of this zone 115mm. Western Plain Region is very fertile region and the soil type is mostly sandy and clayey. The average annual rainfall of this zone is 700-100mm. The soils of

Central Western Zone are clayey alluvial, alluvial, sandy alluvial and sandy types. The average annual rainfall of this zone is 600-965 mm. The soil of South-Western Zone is mostly of sandy, sandy alluvial, alluvial and clayey alluvial type. Some are also has saline and sodic soils. The average annual rainfall of this zone is 75mm. Major area of Central Plain Zone is covered by saline and sodic soils. Beside this, alluvial sandy, alluvial clayey and alluvial types are also found. The average annual rainfall is 850-90mm. The soil of Bundelkhand Zone is mostly rocky. The average annual rainfall is 800-100mm. The average annual rainfall in North-Eastern Plain Zone is 1000-120mm. Major soil types of Eastern Plain region are sandy alluvial, clayey and sodic soil. The average annual rainfall is 1000-120mm. Maximum and minimum temperature range is between 40-42°C and 40°C. In Vindhya Region Zone, soils of plain are light black clay and red alluvial. The average annual rainfall of this zone is 110mm. Maximum and minimum temperature ranges between 40-49°C and 30°C.

The climate of Uttar Pradesh can also vary widely, with temperature as high as 47°C in summer, and as low as -1°C in winter.

Seasons:

Summer (March-June): Hot & dry (temperature rise to 45°C, sometimes 47-48°C); low relative humidity (20%); dust laden winds.

Monsoon (June-September): 85% of average annual rainfall of 990 mm. fall in temperature 40-45° on rainy days.

Winter (October-February): Cold (temperature drop to 3-4°C, sometimes below -1°C); clear skies; foggy condition in some tracts.

Uttar Pradesh is being covered by following nine Agro Climatic Zone:

Zone	Region	Geography & Climate of the Region Districts
Zone 1	Tarai Region	Some part of the district Saharanpur, Muzaffar nagar, Bijnora, Moradabad, Rampur, Bareilly, Pilibhit, Shahjahanpur, Lakhimpur, Bahraich & Shravasti are under this zone. The soil type of this zone is mostly alluvial and clayey alluvial and contains sufficient quality of carbonic materials. The average annual rainfall of this zone is 1150 mm.
Zone 2	Western Plain Region	District Bijnora, Moradabad, jyoti-ba-phule nagar, Rampur, Bareilly, Badaun & Pilibhit under this zone. This is very fertile region and the soil type is mostly sandy & clayey the average rainfall of this zone is 700-1000mm
Zone 3	Central Western Region	District Saharanpur, Muzaffar nagar, Meerut, Baghpat, Ghaziabad, Gautambudh nagar & Buland Shahar are under this zone. The soils of this region are clayey-alluvial, alluvial, sandy alluvial and sandy types. The average annual rainfall of this zone is 600-965 mm.
Zone 4	South-	District Agra, Firozabad, Mainpur, Etawah, Aligarh and

	Western Region	Mathura are under this zone. The soil is mostly of aravalli, sandy, sandy alluvial, alluvial & clayey and alluvial type. Some are also has saline and sodic soils. The average rainfall of this zone is 700 mm.
Zone 5	Central Plain Region	District Lucknow, Unnao, Raebareilly, Sitapur, Hardoi, Kanpur Nagar, Kanpur Dehat, Etawah, Kannauj, Farrukhabad, Auraiya, Allahabad, Kaushambi, Fatehpur and Shahjahanpur are under this zone. Saline & sodic soil types cover major area. Beside these, alluvial-sandy, alluvial clayey, alluvium & clayey soil types belong to this region. The average annual rainfall is 850-900 mm.
Zone 6	Bundelkhand Region	District Jhansi, Lalitpur, Jalaun, Hamirpur, Mahoba, Chitrakoot and Banda falls under this zone. The soil type is mostly rocky. The average annual rainfall is 800-100 mm.
Zone 7	North Eastern Plain Region	District Gonda, Baharaich, Balrampur, Shravasti, Gorakhpur, Maharajganj, Khusinagar, Siddarth nagar, Basti, Sant Kabir Nagar and Deoria are under this zone. Major soil types are sand-alluvial, clayey alluvial & diara. The annual average rainfall is 1000-1200 mm.
Zone 8	Easter Plain Region	District Barabanki, Faizabad, Ambedkarnagar, Sultanpur, Pratapgarh, Jaunpur, Azamgarh, Mau, Ballia, Sant Ravidas Nagar, Ghazipur, Banaras and Chandauli are under this zone. Major soil types are sandy alluvial, clayey & sodic soil. The average rainfall of this region is 1000-1200 mm. maximum and minimum temperature ranges between 40-42° C and 4.6° C.
Zone 9	Vindhyachal Region	District Mirzapur, Sonbhadra and Allahabad are under this zone. The maximum area is undulated and rocky. The soil of plain is light black clay and red alluvial. Average annual rainfall of this zone is 1100 mm. maximum and minimum temperature ranges between 40-49° C and 3° C.

Land Use Pattern of U.P. (lakh ha) :

S. No.	Particulars	Uttar Pradesh
1	Reporting Area	242.01
2	Barren Land	5.30
3	Net Area Sown	166.83
4	Area Sown more than Once	88.41
5	Gross Cropped Area	255.24
6	Cropping Intensity	153.00

Horticulture status in U.P.:

There has been a substantial increase both in area and production of horticulture crops during the 10th plan. The area under fruits crops is expected to go up from 11.36

lakh hectare during 2009-10 to 12.25 lakh hectare during 2010-11 and production is also likely to go up from 135-85 lakh MT to 149.43 lakh MT. Similarly, the production of vegetable crops is also expected to go up from 365.20 lakh MT to 401.72 lakh MT during 2010-11. The increase in production of Potato has also been significant as the production during 2009-10 is likely to the tune of 120 lakh MT which is also likely to go up to 151.75 lakh MT during 2010-11. The present share of Uttar Pradesh in total horticulture production of the country is approximately 26%. U.P ranks third in fruits, second in vegetable and first in potato production among all states. Important fruits grown in the state are mango, guava, aonla, papaya, banana, litchis, jack-fruit Ber and citrus. U.P is the first State in the country to declare those areas as fruits belts where connected specific fruit growing areas exists. Major mango, guava and aonla fruits producing areas have been declare as fruit bets by the State.

Under the Mission, during 2005-06 to 2009-10, an additional area of 83039.17 ha of identified horticulture crops has been covered, besides establishment of 95 nurseries for production of quality planting materials, 1600.75 ha. under vegetable seed production, 2626.93 ha. covered under rejuvenation of old and senile orchards, adoption of organic farming in an area of 30240.2 ha for promotion of organic cultivation of horticultural crops, establishment of 3377 numbers of vermi-compost units, adoption of IPM practices in an area of 1653ha., creation of 12 IPM/INM infrastructure facilities such as bio-control labs., leaf tissue analysis labs, bio-control labs., plant health clinics, creation ofnity water structures and distribution of 27061 colonies with hives. Under the component of Post Harvest Management, 106 units (62 pack houses, 44 cold storages) have been established. Apart from this, 2 functional infrastructures for collection, grading etc. have been set up. 58032 farmers have been given training under various horticultural activities.

The major vegetables grown in the state are peas, chilies, okra, tomato, brinjal, cauliflower, cabbage, spinach, melon, radish, carrot, turnip and cucurbits. The state has about 30.00 lakh hectare under various horticulture crops. Uttar Pradesh is the second largest producer of vegetables in the country after West Bengal. Significant increase in area under vegetables has been recorded on small and marginal farms. As regards productivity, the productivity of fruits was 11.5 MT/Ha during 2008-09 which is likely to increase to 12.18 MT/Ha during 2009-10. Productivity of vegetables increased to 18.09 MT/Ha from 17.28 MT/Ha during 2008-09.

Present Status of Horticulture in U.P

S. No	Item	Ach. of Xth Five Yr. Plan	during XI Plan
1.	Fruits Area (Lac ha.) Production(Lac MT) Productivity (MT/ha)	9.14 103.00 11.27	13.21 164.37 12.44
2.	Vegetable Area (Lac ha.) Production(Lac MT) Productivity (MT/ha)	16.67 276.90 16.61	24.8 441.9 17.81

3.	Potato Area (Lac ha.) Production(Lac MT) Productivity (MT/ha	4.71 104.60 22.20	6.81 166.93 24.51
4.	Growth Rate	6.57	10.87

]

Strategic Planning:

Planting material and seed prodction:

Since 2005 -06 about 12 model nurseries, 85 small nurseries and 6 new tissue culture unit are established to ensure the availability of quality planting material particularly of tissue-culture banana. U.P has only one Govt. TC lab at Lucknow which produces 1.70 lakh TC banana plants. The quality planting material for area expansion programme is being arranged / procured primarily from Govt. nurseries of the department and in case of deficit; it is being arranged from Central Institute of Sub-tropical Horticulture Institute, Rehman khera, Lucknow, State Farm Cooperation, Govt. of India, State Agriculture Universities, CIMAP and other public sector organizations and institutions. At time quality planting material is also procured from the private sector nurseries as per norms/standard fixed by Govt. of India. The quality planting material is being verified by the constituted committee by the District Magistrate in which the officers of the DHM, Department of Agriculture, Forest and district Economical and Statistical officer are the members. This committee examines the quality of procured planting material on random basis.

Model Nurseries:

Production and distribution of good quality seeds and planting material is an important component of the Mission. To meet the requirement of planting material for bringing additional areas under improved varieties of horticultural crops assistance was provided for setting up new nurseries under the Public as well as Private sector. About 15 model nurseries have been established by public sector cater the 30% requirement of planting material of fruit crops for the state and 11 model l nurseries are proposed at private sector, but they are yet to establish for one reason or other.

Small Nurseries:

The assistance will be to the extent of 100% of the cost for the Public sector and 50% of the cost subject to a ceiling of Rs.1.5lakhs for the nurseries in the private sector. Small nurseries would cost Rs.3.0lakh per unit. It would be the responsibility of the nurseries to ensure quality of the planting material through self accreditation. Nurseries will also be regulated under the legislation in force relating to seeds and planting material. The nurseries could be multi-crop or crop specific depending upon the requirements of planting material in the locality/project area. State has proposed 33 small nurseries at public sector, and 114 small nurseries at private sector. Committee has seen established model/small nurseries at public sector, whereas no nurseries observed at private sector. The requirement of planting material meets from private nurseries producing planting material at their orchard sites other than public sector nurseries.

Large number of TC units already exist, some of which need strengthening/rehabilitation, No new Tissue Culture (TC) units are proposed to be set up under the Mission assistance. The existing units would be provided support for rehabilitation/ strengthening subject to a maximum ceiling of Rs.8.0lakhs for the TC Units in the Public sector and 50% of the cost with a ceiling of Rs.4.0lakhs for the TC units in the Private sector.

Plants availability on Govt. Nurseries & NHM requirement for the Year 2011-12

S.N O	NAME OF PLANTS	PRODUCTION 2011-12	PREVIOUS YEAR BALANCE	TOTAL AVAILABILITY	TOTAL REQUIREMENT (NHM)	SURPLUS / EXTRA NEED
1	Mango	389000	384000	773000	255760	517240
2	Guava	581000	239000	820000	915849	-95849
3	Aonla	176000	105000	281000	118015	162985
4	Litchi	47000	33000	80000	55195	24805
5	Bael/ Citrus/ Ber	103200	142800	246000	190365	55635
	Total	1296200	903800	2200000	1535184	664816
6	Other	60000		60000		60000
	G. Total	1356200	903800	2260000	1535184	724816

Vegetable Seed Production:

The State Horticulture Mission will ensure the timely availability of the good quality seeds and planting material to the farmers at nominal price. The production of true to the type quality seeds of recommended varieties of vegetables will be assisted under this component.--The assistance for vegetable seed production will be Rs.50, 000/- per ha for the Public sector and 50% of the cost subject to a ceiling of Rs.25, 000/- per ha to the Private Sector limited to 5ha per beneficiary as credit linked back ended subsidy. About 761 ha. cropped area was sown for quality seed production of high yielding varieties suitable for various agro climatic conditions and breeders seeds were provided by ICAR institutes/SAUs. To facilitate proper handling, storage and packaging of seeds, assistance would be provided for creating infrastructure like drying platforms, storage

bins, and packaging units etc. 100% assistance will be provided to the public sector and the assistance to the private sector will be credit linked back ended subsidy limited to 25% of cost.

Vegetable Seed Production is planned in few districts having good potential for seed multiplication, particularly potato, pea and okra. Vegetable seed production targets are 8606 ha. in coming three years on public and private sector. U.P is number one producer of potato and pea in the country. This will help in higher seed replacement rate and production.

**Year wise Fruits, Vegetables including potato: Area Production & Productivity:
The physical achievements since 2005-06 to 2010:**

Year	Fruit			Vegetable			Potato		
	Area	Prod.	Pvty.	Area	Prod.	Pvty.	Area	Prod.	Pvty.
2006-07	8.24	88.87	10.79	15.91	266.06	16.72	4.72	105.37	22.04
2007.08	8.40	91.06	10.84	17.76	296.20	16.68	5.04	110.95	22.02
2008-09 (estmd.)	9.53	109.60	11.50	19.21	332.00	17.28	5.14	117.00	22.76
Increase	1.67	24.14	0.55	3.65	77.51	0.92	0.85	23.12	0.76
2009-10 (Pro.)	10.75	131.0	12.19	21.0	380.0	18.10	5.35	125.45	23.44
2011-12	13.21	164.37	12.44	24.10	441.90	18.34	6.38	166.93	26.16

Area Expansion:

There is an increasing trend in area of all horticultural crops in Uttar Pradesh. The area expansion is more significant in fruits like Mango, Anola and guava and registered a substantive area increase of 16648 ha. Lucknow district area under floricultural crops increased tremendously to the level of 800%. These figures indicate the positive impact. In the new plantation for perennial fruits, the main fruits are Mango, Guava, and Aonla .Mango accounts for the largest proportion of 40.67% of the total area followed by Guava (23.88%), Aonla (23.29%) . Recently Banana clusters are developed in substantive areas of Lucknow, Allahabad, Kausambi and Pratapgarh districts. About 60%more expenditure has been incurred on the area expansion programme in the state.

Area expansion with high density planting of mango and guava is being taken up in fruits belt and other major producing areas of 200 Ha. in the state. Tissue culture banana is proposed in new clusters with a target of 6295 Ha.

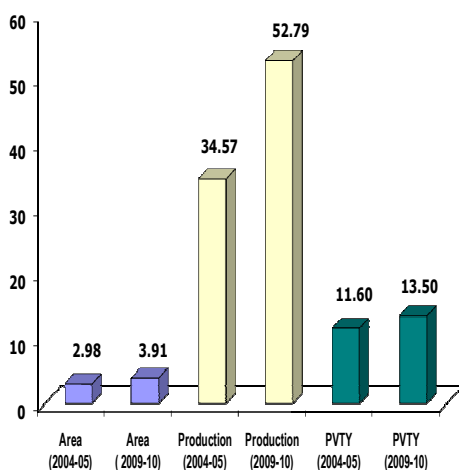
Flower cultivation in 10090 Ha. is proposed with close linkage of erection of green house and cost planning material of high value flowers for poly houses.

The horticulture development has been given focused attention during Xth Plan period in the State and has resulted in spectacular change in the horticulture crops.

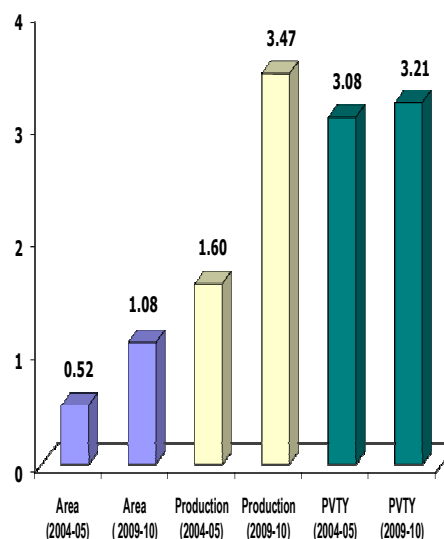
Impact of NHM – 45 Districts

Area : Lac ha.,
Production : Lac MT.,
Productivity : MT/Ha.

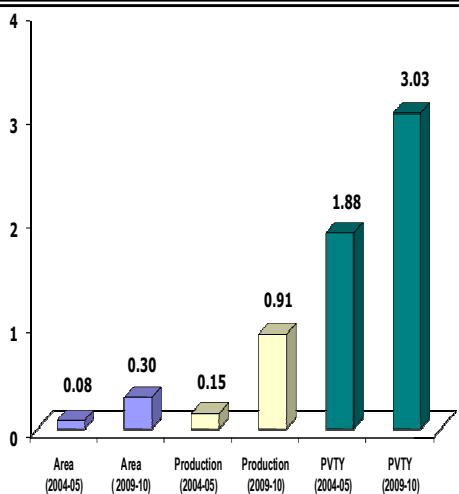
FRUITS



SPICES



FLOWERS



Crop	Pre NHM (2004-05)			Post NHM (2009-10)		
	Area	Prod.	PVTY	Area	Prod	PVTY
Fruits	2.98	34.57	11.60	3.91	52.79	13.50
Spices	0.52	1.60	3.08	1.08	3.47	3.21
Flower	0.08	0.15	1.88	0.30	0.91	3.03



Achievements for area expansion programme (Unit in Ha./No.):

Crops	Achievements						TOTAL
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	
HD Mango						25	25
HD Guava						45	45
Mango	3064	1852	3420	3025	2573	1567	15501
Guava	1481	447	2510	2877	3219	2237.5	12772
Aonla	1757	229	1277	1400	1469	1015	7147
Litchi	331	463	848	1080	917	446	4085
Ber/Bael/Citrus			72	448	592	466.5	1578.5
Banana	970	500	2520	2828	3378	2049	12245
Flowers	652	1712	4289	5461	2919	2400	17433
Spices	2080	3974	10724	18010	6575	2680	44043
Seed Production	281	212	767	2185	2824	2279	8548
Rejuvenation	626	77	1624	1311	734	4692	9064
Creation of Water resources	0	0	1	34	41	54	130
Mulching	434	175	1869	3555	0	85	6118
Promotion of IPM	400	1300	9010	7720	3685	1300	23415
Organic farming	1050	10459	8311	9607			29427
Vermi-Compost/HDPE Unit	0	452	1052	2066	336	512	4418
Training of Farmers	17045	727	24365	26406	21275	17353	107171
Bee keeping	1200	8721	11808	10160	12045	4065	47999

Rejuvenation of old and senile orchards:

Uttar Pradesh is a major mango, guava and aonla producing state. The area under mango is 2.76 lakh ha. in the state out of which the area in fruit belt districts is approximately half of it. Rejuvenation /replacement of senile plantation with canopy management are necessary for increasing productivity. During past years, due to unawareness and unacceptability of this technique at farmer's level, the target could not be achieved. The old and senile/unproductive orchards are being rejuvenated under NHM since 2005-06 and an area of 3945 ha. have been rejuvenated since then. The Technologies adopted are as suggests/recommended by CISH, Rehmankhara, Lucknow. However, during 2010-11 to 2012-13, an area of 24645 hectares will be rejuvenated by the way of light, medium and hard pruning and other recommended management practices. Similarly, Aonla and guava orchards are also to be rejuvenated on priority basis in old orchards of major districts.

Infrastructural Development:

81 Multi-community multi-chamber cold storages with technical specification as prescribe by Govt. of India are proposed in major 20 potato and vegetable growing districts which will help in motivating other already established cold storages to upgrade their technology.

Since inception of NHM programme 199 pack-house, 24 pre-cooling units, 30 mobile pre-cooling units, 22 refer van/containers, 130 primary/mobile/minimal processing unit, 7 ripening chamber, 144 low energy cool chamber, 329 prevention units and 204 low cost onion structure are proposed to be established in major crop producing areas.

Considering the inefficiency of rural markets, 74 new rural markets and 196 retail markets are proposed. 938 mobile/static vending are proposed to reduce the post harvest losses. 75 functional infrastructures for collection, sorting, grading and packing are proposed.

Major Infrastructures created under NHM:

Programmes	No.	Institution
Model Nursery (Public Sector)	12	NDUAT-Faizabad/ CSAUAT-Kanpur/ SVBPUAT-Meerut/ NBRI- Lucknow/Crop Research Station-Ghazipur/ KVK's-Bahraich, Chandauli, Mau/ CISH, Rahmankhera/ CISH-Raebareilly Road/ BHU- Varanasi/ Allahabad Agriculture Institute- Allahabad
Small Nursery (Public Sector)	16	KVK (BHU) Bharkhacha-Mirzapur/ AAIDU-Allahabad/ NBRI-Lucknow/ CSAUAT-Kanpur/ SVBPUAT-Meerut 12 Nurseries at KVK's
Plant Health Clinic	5	BHU-Varanasi/ CSAUAT-Kanpur/ SVBPUAT-Meerut/ NDUAT- Faizabad/ Biotek Park-Lucknow
Leaf Tissue Analysis Lab	6	BHU-Varanasi/ CISH-Lucknow/ NDUAT-Faizabad/ CSAUAT-Kanpur/ SVBPUAT-Meerut/ Biotek Park-Lucknow
Bio Control Labs	7	BHU-Varanasi/ NDUAT-Faizabad/ SVBPUAT-Meerut/ CSAUAT-Kanpur/ Biotek Park-Lucknow/ CISH-Lucknow/ Lucknow University
Tissue Culture Labs	4	NDUAT-Faizabad/ SVBPUAT-Meerut/ CSAUAT-Kanpur/ BHU-Varanasi
Mushrooms Spawn Labs	5	NDUAT-Faizabad/ Bahraich/ KVK, Saharanpur / Nagina/ SVBPUAT-Meerut
Diseases Forecasting unit	1	CSAUAT, Kanpur
Seed Infrastructure	1	BHU, Varanasi
Rural/Wholesale Mandies	12	Mandi Parishad UP-Sidharth Nagar, Farrukhabad, Ghaziabad (2) Santkabar Nagar, Saharanpur, Bulandshahar(2), Kanpur Nagar, Barabanki, Firozabad &

		Ballia
Cold Storages	157	Major Potato Producing Districts
Model Nursery (Public Sector)	12	NDUAT-Faizabad/ CSAUAT-Kanpur/ SVBPUAT-Meerut/ NBRI- Lucknow/Crop Research Station-Ghazipur/ KVK's-Bahraich, Chandauli, Mau/ CISH, Rahmankhera/ CISH-Raebareilly Road/ BHU- Varanasi/ Allahabad Agriculture Institute- Allahabad
Small Nursery (Public Sector)	16	KVK (BHU) Bharkhacha-Mirzapur/ AAIDU-Allahabad/ NBRI-Lucknow/ CSAUAT-Kanpur/ SVBPUAT-Meerut 12 Nurseries at KVK's
Plant Health Clinic	5	BHU-Varanasi/ CSAUAT-Kanpur/ SVBPUAT-Meerut/ NDUAT- Faizabad/ Biotek Park-Lucknow

Resource Management:

In order to facilitated the latest technology to the beneficiaries fields, human resource development programme is planned in a way that the get the technology to their door steps, through training within district, state and outside the state and through exposure visit 58384 beneficiaries will be trained through these programme.

Horticulture mechanization is planned in such a way that the 21 fruit belt of mango, guava and aonla are benefited by power operated machine and import of new machine for demonstration purposes. Rs. 4.00 crore is proposed for these activities.

The varieties recommended by Technical Support Group (TSG) of State Horticulture Mission, U.P. is listed below. These varieties are recommended to be planted /cultivated in the different agro-climatic zones of the state:

Crop and Varieties recommended:

Crop/Item	Varieties/Specification
Grafted Saplings of different Fruits Plants	
Mango	Dashehri, Chausa, Amrapali, Mallika, Totapai, Gaurjeet, Bombay Green, Dasehari-51, Ramkela
Guava	L-49, Allahabad-safeda, Lalit, sangam, Apple colour (surkha), Arka Mridula
Aonla	NA-6, NA-7, NA-10, Kanchan, Laxmi-52
Litchi	Rose-scented, Shahi
Bael	NB-5, NB-6 & other suitable selections
Floriculture	
Gladiolus	White Prosperity, Friendship Pink, Big Lime, Supreme, American Beauty, Novalux, Yellow Supreme, Rose Supreme, Jitter, Jister Gold, Jackson Willy Gold etc
Marigold	Pusa Narangi, Pusa Basanti & Other Hybrids
Tuberose	Vaibhav, Shringar, Suvasini, Swarnrekha, Rajaterakha, Prajjwal.

Spices	
Turmeric	Rajendra-Sonia, Azad haldi-1 N.H.D.-18, Vallabh-Priya, Roma, Sudarshan & other important varieties
Chillies (Hybrid)	<i>Kashi Anmol, Kashi Vishwanath, Indira, Ujala (PS/NU) 010A, Pari hot, NS-1101, NS211, Mahajwala, Divyajyoti, 86235, Siddhi, Jawahar Dhoom, Ulka, Daiya, Bss 414</i>
Ginger	IISR Rejatha, Subhprabha, Baruasagar (selection)
Garlic	G-1, G-50, G-282

Details of cluster formed:

Crop	Covered Districts	No. of Clusters	Linkages/supply chain/end to end approach
Mango	34	385	Processing units & Mandies of different states.
Guava	40	260	Processing units, Local & outside Mandies.
Aonla	18	82	Processing, Medicinal & Cosmatic industries.
Litchi	7	15	Local Mandies
Bael/Ber/Citrus	13	35	Local market & processing units
Banana	21	160	Local mandies & outside state.
Spices	45	182	Processing units & Local Mandies.
Flowers	43	96	Local mandies, Hotels & metro cities
Bee Keeping	28	20	Export, Local Market, Processing, Medicinal & Cosmatic Industries.

Creation of Water Sources:

About 650 ha. Cropped area was brought under water source by creating community water ponds. Under the Mission assistance would be provided for creating water sources through construction of community tanks, farm ponds/reservoirs with plastic lining. The assistance will be limited to Rs.10.0lakh per unit for an area of 1ha to be taken up on community basis. Maintenance

Protected Cultivation:

As per report submitted 15.3% targets are achieved in respect of hi-tech green house. However, in the category of poly structures or shade nets about 50% physical progress has been indicated. Although in case of greenhouse 33.60% of the allotted funds have been spent, but the physical achievement as reported by the UPSHM is much below the targets. About 80% of the physical target of mulching has been achieved, which can be said to be a good beginning. During the visits in the districts, not even a single complete poly hose or shade net was seen by the team. In case of Plastic tunnel, physical achievements seem to be a 30% as reported.

Pollination Support through Bee-Keeping:

More than half of the physical target (60%) i.e. 1016 colony out of 1597 target of distribution of colonies with hives has been achieved. As far as technology dissemination through demonstration is concerned, no work has been initiated.

Post Harvest Management:

As reported by the UPSHM, not much progress has been made. In the case of pack house, physical targets have been unsatisfactory. Large no of pack house are indicated in targets, but most of them are shown as proposed only. However, the JIT team did not see any pack house unit in the districts visited. A good progress is made for infrastructure development of cold storage in the state. i.e. 42 out of 5 proposed is functional. It is suggested that at least 25% of proposed budget may be utilized for post harvest management. Therefore, UPSHM should take Post Harvest Management as a priority area for the holistic development of this sector.

Details of project sanctioned and progress:

S. No.	Component	No. Of Project	Status
1	Cold Storage	175	170 completed
2	Ripening Chamber	2	1 completed
3	Primary/Minimal processing units	3	-
4	Whole Sale Market	12	8 completed
5	Functional Infrastructure	22	1 completed
6	Distillation Unit	7	1 completed
7	Refrigerated Van	2	1 completed
8	Onion Storage	7	-
9	Miscellaneous project	4	2 completed
10	Model Nursery (Public Sector)	12	Completed
11	Small Nursery (Public Sector)	16	Completed
12	Plant Health Clinic	5	Completed
13	Leaf Tissue Analysis Lab	6	Completed
14	Bio Control Lab	7	Completed
15	Tissue Culture Lab	4	Completed
16	Mushrooms Spawn Lab	6	5 Completed
17	Diseases Forecasting unit	1	Completed
19	Seed Infrastructure	3	1 Completed

Photographs of Visit to Ballia District



New tissue culture Banana plantation in Ballia



JIT visit to old mango orchard for rejuvenation



New mango plantation in Ballia



Traditional perfume extraction unit in Ballia



Damascus rose plantation for value addition



Scented Jasmine plantation for perfume extraction



Cold Storage unit establish at Chandpur,Ballia



Stored potato seed of assorted size



Papaya cultivation in farmers field in Kushi Nagar ,Kushinagar



Tissue culture banana crop at Sarkatia



Newly Planted Tissue culture Banana at Sarkatia



Clean cultivation of Tissue culture Banana

Vermi compost units established in the districts of eastern U.P.



Established nurseries in farmers field and at Govt. farms



Rejuvenation for old and senile mango orchards



Turmeric plantation in open fields and in shades.(4slides)



Tuberose production on large scale in field



Marigold cut flower production in farmers

Newly planted orchards of Guava and Mango



JIT visit to farmers field examining the field problems



Floriculture units under protected conditions



