Report of the Joint Inspection Team on their inspection visit to Katihar,Purnea and Kishan ganj districts of Bihar during October,2012(8th Oct. to 14thOct., 2012).

National Horticulture Mission

Department of Agriculture and Cooperation (DAC),

Krishi Bhavan, New Delhi

The joint Inspection Team (JIT) consisting of the following members visited during 8th Oct. to 14thOct., 2012 to Katihar,Purnea and Kishanganj districts of Odissa for monitoring NHM,RKVY,NMMI and NBI porgress for the state of Odisha.

1. Dr. R.C.Upadhyaya, Chief consultant (NHM), Ministrey of Agricultural, Krishi Bhawan, New Delhi.
2. Sri Arun Singh , Horticulture officer (HQ), Representative from Directorate of Horticulture, Govt. of Bihar,Patna
3. Binay Kumar Sukla,Nodal officer(NHM &NVI), Directorate of Horticulture, Govt. of Bihar,Patna
4. Sri S.K.Mishra,Nodal Officer(NMMI), Directorate of Horticulture, Govt. of Bihar,Patna
5. SriB.B.Sinha, Nodal Officer(Bamboo Mission), Directorate of Horticulture, Govt. of Bihar,Patna

Note: District Officer of respective districts coordinated the field visits.

Components of NHM, RKVY, NMMI and other programmes:

- Crop specific cluster at district level.
- Nurseries management and progress including accreditation of nurseries.
- Vermin compost units under SHM.
- Flowers and vegetable production under protected conditions.
- Micro irrigation scheme and use of plastic in mulching, irrigation and precision farming.
- Placement of technical Staff at Management and also at field Level.
- Other activities and KVK, s support including Financial Progress: (Rs. in lakhs).
- National Mission on Micro Irrigation.
- National vegetable Initiative.

Status of National Horticulture Mission in Bihar:

The Centrally Sponsored Scheme of National Horticulture Mission (NHM) is being implemented in 23 districts on a Mission mode approach to address all the issues related to holistic development of Horticulture in the State since 2005-06.The scheme is being implemented in twenty three identified potential districts with cluster approach. The districts covered under NHM include East Champaran, West Champaran, Muzzafarpur, Samastipur, Vaisali, Dharbhanga, Araria, Purnia, Kishanganj, Katihar, Bhagalpur, Banka, Munger, Patna, Nalanda, Aurangabad, Jamui , Khagaria, Gaya, Madhubani, Rothas, Begusarai and Saharas.

The focus crops identified under the programme include Mango, Litchi, Banana, Guava, Pineapple, Makhana, Beal and Aonla.

Major activities being undertaken in the programme are production and distribution of planting material, vegetable seed production, area expansion, rejuvenation of senile orchards, creation of community water resources, protected cultivation, IPM/INM, organic farming, pollination support through bee-keeping, development of infrastructure on post harvest management & marketing and human resource development.

Physical Progress

Salient progress till 2011-12 is as follows:-

- An additional area of 0.42 lakh ha of identified horticulture crops are covered.
- 80 nurseries have been established for production of quality planting materials.
- An area of 485 ha. has been covered under rejuvenation of old and senile orchards.
- Organic farming has been adopted in an area of 1170 ha for promotion of organic cultivation of horticultural crops.
- IPM practices have been adopted in an area of 4315 ha.
- 15 IPM/INM infrastructure facilities such as Leaf tissue analysis labs, disease forecasting units have been created.
- An area of 92 ha has been covered under protected cultivation.
- 399 community water structures have been created.
- Harvest Under the component of Post Management, 65 units including pack houses, cold storage units, refrigerated vans, primary/ mobile processing units, ripening chambers, pre cooling units attach to cold storages and mobile pre cooling units) have been established.
- 2 market infrastructures have been set up.

Financial Progress:

During 2005-06 to 2011-12, an amount of Rs. 144.44 crore was released to the State. The State has reported an expenditure of Rs. 137.71 crore till March 2012. An allocation of Rs. 55 crore has been approved including GOI share of Rs.46.75 crore for Annual Action Plan 2012-13. A fund to the tune of Rs. 19.88 crore has been released during the current financial year and out of which an expenditure of Rs. 4.74 crore has been reported.

Year-wise Outlay, Funds Released and Expenditure under NHM in Bihar (Rs. In crore)

Year	Outlay (GOI Share)	Releases	Expenditure
2005-06	84.48	31.00	0.03
2006-07	115.31	35.00	8.48
2007-08	107.72	2.70	22.35
2008-09	142.35	31.22	24.54
2009-10	38.25	24.35	22.40
2010-11	38.25	NIL	25.84
2011-12	34.00	20.17	34.07
2012-13	46.75	19.88	4.74

Observations of JIT:

JIT has recorded following common observations on implementation of centrally sponsored Horticulture development programmes in the visited districts during 8th October to 14th October, 2012.

- JIT observed that Horticulture Officers at District level are working under District Agriculture Officers for all administrative and financial control. At District level only District Horticulture Officers are only posted alone for horticulture development in the entire distirct and no other regular technical staff is provided for field supervision in the district. Contractual technical manpower limited to 3-4 nos are employed at district level for field supervision of horticulture development in the district. JIT suggests that horticulture department may be provided separate identity for independent working and not with department of agriculture as policy issue.It is suggested that technical posts may be created upto block level as in agriculture department to supervise horticulture activities effectively. It is also advised to arrange the refresher trainings and exposure visits for contractual field funtioneries at ICAR/CSIR institutions, SAUs and KVKs.

- Nurseries established in public /private sector needs due care and proper maintenance as per guidelines of NHM. Nurseries got to be accredited by National Horticulture Board/SAU/ICAR so that supply of the better managed planting material to farmers. It is suggested that field functioneries posted at Govt. nurseries should have technical back ground for scietific management of nursries.Supply of plants may not be restricted from university alone ,if good planting material is available at nearby accredited nurseries.

- Scietific processing of Makhana technology may be provided to the farmers for better output, efficient management and quality product of Makhana. Makhana Research Centre (ICAR) may be consulted for standerdised technology development for processing.

- JIT observed that more attention should be given on nursery establishment, rejuvenation, bee keeping, mechanization and protected cultivation in future. It is appreciated that State has adopted cluster approach in area expansion activities in these districts. The entire production cluster needs to be linked with PHM & marketing infrastructure.

- JIT suggested that priority should be given to replace G-9 (tissue cultured seedlings) in place of other cultivars.Tissue culture planting material of G-9(12” and above seedlings) may be supplied to the farmers from DBT accredited nurseries.More emphasis should be given for litchi, Mango, Pineapple, Banana and guava along with bee keeping under area expansion programme.

- Intercrop in pineapple field may sucessfully be cultivated since it is shade loving crop. Farmers may adopt bayleaf (Tej Patta) or Banana cultivation as shade crop as is the common practice in Kishanganj district. Farmers may take intercropping of legumes/vegetables in the newly established orchards.

- Overall progress of implementation of the NHM programme is satisfactory for area expansion programme in Eastern districts of Bihar for adopting cluster approach for Banana (Var. Grand Nene), Mango, Makhana and Pineapple.

- Rejuvenation and replacement of senile orchards specifically of Mango,Guava and Litchi should be taken up on priority. Farmers may also be provided proper training and provide basic implements for management of senile orchards.Rejuvenation activities needed regular field supervision of technical staff.
- 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.It is also suggested that interface meetings may be organized with KVK authorities to establish fruit nurseries and seed production units at KVK, s.

- Micro Irrigation in eastern part may not be linked with orchards development since water abalibility is satisfactory.Micro irrigation beneficiaries should be trained on fertigation scheduling and its application mode including post installation maintenance and MOU may be signed with the firm for technical support and maintenance.
- 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.

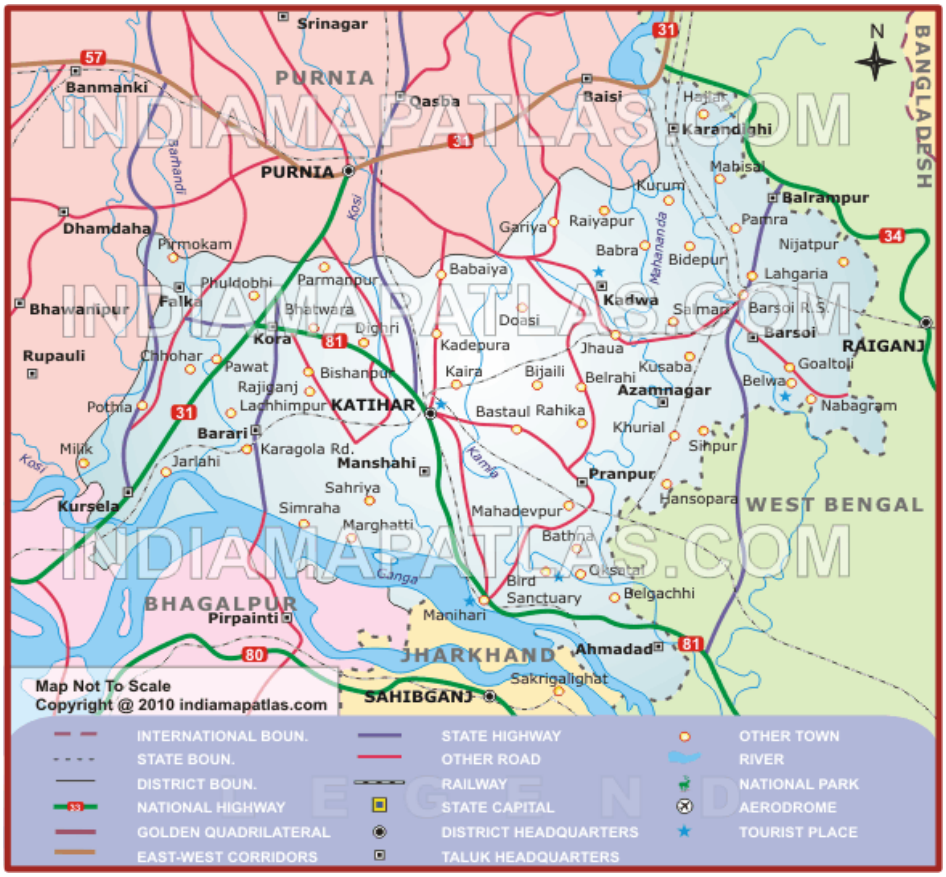
- Appropriate size sign board with NHM logo indicating the name of beneficiary,activity,crop details(cost,assistance provided,year)need to be displayed at all sites benefitted under NHM and other schemes.

- The farmers may be provided training on management of green house, poly house, shade net, plastic tunnel, and mulching. It is suggested that the farmers may also be trained of proper utilization of such infrastructure facilities.
- It is suggested that interface interaction meetings may be regularly organized with KVK's/ ICAR institutes/ University to adopte location specific recommendations in farmers field. Officers and technical staffs also need refreshers training regularly at ICAR/CSIR and SAUs.
- 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. Farmers are not aware of recommended package of practices of horticultural crops**.**
- It is suggested that farmers may be provided hand outs of technologies suitable to the region in local dilects.Farmers should be provided regular training and awareness programmes.

- The annual report of the NHM programme and success stories of various NHM interventions needs to be submitted to DAC at the earliest.

Katihar District:

Katihar district is one of the thirty-seven districts of Bihar state and located at 25°32′N 87°35′E25.53°N 87.58°E. According to the 2011 census Katihar district has a population of 3,068,149 and district occupies an area of 3,057 square km. Katihar district is situated in the plains of North Eastern part of Bihar State, surrounded by Purnea district (Bihar) in the north and the west, Bhagalpur district (Bihar) and Sahebganj district (Jharkhand) in the south and Malda district and Uttar Dinajpur district (West Bengal) in the east. The main rivers of the District are mighty Ganga (southern boundary, 25 kilometers from Katihar Town), magnificent Kosi (western boundary, 30 kilometers from Katihar Town) and beautiful Mahananda besi des many other small rivers like Kari Kosi (flowing by the side of Katihar town), Kamla etc. The Kosi (Sorrow of Bihar) merges with Ganga at the south-west boundary of Katihar District.



Climate and Soil:

Jharkhand plateu in the south and a multiple of rivers combined with good rainfall gives it a distinct climate which can be termed more or less pleasant during most of the year. The rainy season flood is an annual feature. And on 2nd October 1973, Katihar acquired status of an independent district.

Economy:

The major source of living is agriculture. The industry here is mainly agro based. Banana,Makhana, Jute, Maize are the main cash crop of the farmers of the Katihar district. One of the agro-based industries to join the group is Makhana. The Makhana Phodi (the place where edible makhana is produced from raw makhana) is growing fast. The main crops are Paddy, Jute, Makhana, Banana, Wheat, Maize and pulses.Jharkhand plateu in the south and a multiple of rivers combined with good rainfall gives it a distinct climate which can be termed more or less pleasant during most of the year. The rainy season flood is an annual feature. .

Area of Horticultural Crop:-

Mango	:	5400 Hac.
Lichi	:	1355 Hac.
Guava	:	19.50 Hac.
Makhana	:	4373 Hac.
Banana Sukar	:	4625
Banana Tissueculture	:	350 Hac.
Potato	:	7500 Hac.
Brinjal	:	772 Hac.
Ridge Guard	:	1072 Hac.
Vindi/Orkha	:	1205 Hac.
Cut Flower	:	4960 Hac.
Batter Guard	:	2219 Hac.
Cabbage	:	2750 Hac.
Tomato	:	672 Hac.
Other Vegetable	:	9372 Hac.

List of Farmers Visited:

S.N.	List of Farmer/Address	Crop/Component	Area	Remark
1	Sukh Pd. Singh S/o Late Ram Varuda Singh At. Devkifur Dalan East Blcok Katihar	Mango.(Lungra,Mumbai Aprapalli).	4ha	Needs systematic layout.good crop
2	Vidya Sagar Chaudhary, Blcok Kora Village Kheria Kora	Mango(Lungra) Litchi (Sahi) Guava	4ha.	Mixed in single layout plan and shown more area
3	Shyama Devi W/o Vishwanath Yadav, Village-Vabara Block-Katiha	Mango(Malda) (Mumbai)	3ha.	Good crop and intercroped with vegetables
4	Saileshwar Jha,Village Phulbaria Block Khora	Tissue culture Banana (Cv.G-9)	2ha.(6172)	Performance satisfactory.Needs proper size planting material
5	Ajit kumar Chaudhary Village Sirsaun fulbaria, Block khora	Tissue culture Banana (Cv.G-9)	0.89ha.(2747)	Intercroped with brinjal.Low lying area
6	Sushil Kumar Suman,Village Sirsa,Block Katihar, Block khora	Tissue culture Banana (Cv.G-9)	1.00 ha.(3086)	Intercroped with brinjal.Low lying area
7	Sasibhusan Singh, Village. Basuhar (Majahia) Block Kurshela	Tissue culture Banana (Cv.G-9)	2.13ha. (6573)	
8	Vidya Sagar Chaudhary, Blcok Khora Village Kheria Khora	NMMI –Sprinkler System in	1.88ha.	Unit is not properly installed.Mou for maintenance
9	Viveka Chaudhary, Khoda, Katiha	NMMI –Sprinkler System in	2ha.	Unit is not properly installed.Mou for maintenance
10	Sri Sunil Kumar Jha, Rampur Kamal Rampur Block Haragam	Model Nursery 2010-11	4ha.	
11	**Bamboo Mission**, Sri shankar Pal Jaiswal, Kheria, Khurdha-manufacturing board	marketing (Cost - 16lakhs)2011 -2012		
12	Visited KVK katihar for discussion on technical support to NHM acticities			KVK shopuld support R&D activities

1. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Sukh Pd. Singh S/o Late Ram Varuda Singh At. Devkifur Dalan East Blcok Katihar
2	Total land available with the beneficiary	4.00 ha
3	Crop cluster under which covered	Mango
4	Name & variety of crop planted	Lungra, Bombai, Ampralli
5	Source of planting material	Own Horticultural Nursery Year 2011-12
6	Number of plants planted	400 (four Hundred)
7	Date of planting	2009-2010
8	Number of plants survived (also indicate percentage survival)	400
9	Total amount of subsidy assistance due to the beneficiary (Rs)	19600
	Amount paid & date of payment	Rs. 19600 Dt. 21.9.2011
11	Mode of Payment	A/c Cheque
12	Source of irrigation water	Tube well
13	Whether Drip, Sprinkler system in use	
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	
18	Available marketing facility for the crop	Local
19	Other infrastructure available in the vicinity	
20	General upkeep of the plot (Very good/Good/ Average/Poor)	good
21	Any other relevant observations by the JIT	

2. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Vidya Sagar Chaudhary , Blcok Khora Village Kheria Khora
2	Total land available with the beneficiary	2.62 ha
3	Crop cluster under which covered	Mango , Litchi, Guava
4	Name & variety of crop planted	Mango-Lungra + Litchi-Sahi +Guava (4ha.)
5	Source of planting material	Own Horticultural Nursery
6	Number of plants planted	400
7	Date of planting	Year 2011-12
8	Number of plants survived (also indicate percentage survival)	More then 362
9	Total amount of subsidy assistance due to the beneficiary (Rs)	(1) 14358 (2) 8646
10	Amount paid & date of payment	14358 dt 14.11.2011 8646 dt 14.6.2012
11	Mode of Payment	A/c Cheque
12	Source of irrigation water	Tube well
13	Whether Drip, Sprinkler system in use	Drip
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	Pumpset boring
18	Available marketing facility for the crop	Local
19	Other infrastructure available in the vicinity	
20	General upkeep of the plot (Very good/Good/ Average/Poor)	Average

21	Any other relevant observations by the JIT	Not planted properly and layout as mixed orchard

3. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Shyama Devi W/o Vishwanath Yadav, Village-Vabara Block- Katihar
2	Total land available with the beneficiary	3.00 Ha
3	Crop cluster under which covered	Mango
4	Name & variety of crop planted	Maldah, Bombai
5	Source of planting material	Own Source
6	Number of plants planted	300
7	Date of planting	2011-12
8	Number of plants survived (also indicate percentage survival)	98%
9	Total amount of subsidy assistance due to the beneficiary (Rs)	(1) Rs.14700 (2) Rs. 9900
10	Amount paid & date of payment	(1) Rs.14700 dt 30.7.2011 (2) Rs. 9900 dt 10.9.2012
11	Mode of Payment	A/c Cheque
12	Source of irrigation water	Tube well
13	Whether Drip, Sprinkler system in use	Sprinkle System
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	
18	Available marketing facility for the crop	Newly established orchard
19	Other infrastructure available in the vicinity	
20	General upkeep of the plot (Very good/Good/ Average/Poor)	good
21	Any other relevant observations by the JIT	

4. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Saileshwar Jha,Village Phulbaria Block Khora
2	Total land available with the beneficiary	2 ha.
3	Crop cluster under which covered	Banana
4	Name & variety of crop planted	G.9. Tissn culture
5	Source of planting material	Sheel Bio. tech .,New Delhi
6	Number of plants planted	6172
7	Date of planting	2012-13
8	Number of plants survived (also indicate percentage survival)	6172
9	Total amount of subsidy assistance due to the beneficiary (Rs)	Not yet given
10	Amount paid & date of payment	
11	Mode of Payment	
12	Source of irrigation water	Tube well
13	Whether Drip, Sprinkler system in use	Sprinkler
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	Pumpset & Boring
18	Available marketing facility for the crop	Local
19	Other infrastructure available in the vicinity	Well maintained
20	General upkeep of the plot (Very good/Good/ Average/Poor)	Very good

21	Any other relevant observations by the JIT	

5. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Ajit kumar Chaudhary Village Sirsaun fulbaria, Block khora
2	Total land available with the beneficiary	1.89 ha
3	Crop cluster under which covered	Banana Cv. G-9
4	Name & variety of crop planted	Tissue culture
5	Source of planting material	Sheel Bio. Tech. New Delhi
6	Number of plants planted	2747
7	Date of planting	2012-13
8	Number of plants survived (also indicate percentage survival)	2747
9	Total amount of subsidy assistance due to the beneficiary (Rs)	Not given
10	Amount paid & date of payment	
11	Mode of Payment	
12	Source of irrigation water	Tube well
13	Whether Drip, Sprinkler system in use	Sprinkler
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	Pumpset & Boring
18	Available marketing facility for the crop	local

19	Other infrastructure available in the vicinity	
20	General upkeep of the plot (Very good/Good/ Average/Poor)	good
21	Any other relevant observations by the JIT	Intercroped with brinjal crop

6.Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Sushil Kumar Suman,Village Sirsa,Block Katihar
2	Total land available with the beneficiary	1.00 Ha.
3	Crop cluster under which covered	Banana ,Cv. G-9
4	Name & variety of crop planted	Tissue culture
5	Source of planting material	Sheel Bio.Tech., New Delhi
6	Number of plants planted	3086
7	Date of planting	2012-13
8	Number of plants survived (also indicate percentage survival)	3086
9	Total amount of subsidy assistance due to the beneficiary (Rs)	Not given
10	Amount paid & date of payment	
11	Mode of Payment	
12	Source of irrigation water	Tube well
13	Whether Drip, Sprinkler system in use	Drip
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	
18	Available marketing facility for the crop	Local
19	Other infrastructure available in the vicinity	
20	General upkeep of the plot	Good

	(Very good/Good/ Average/Poor)	
21	Any other relevant observations by the JIT	Clean Crop

7.Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Sasibhusan Singh,Village.Basuhar(Majahia)Block Kurshela
2	Total land available with the beneficiary	2.13 ha.
3	Crop cluster under which covered	Banana
4	Name & variety of crop planted	G 9 Tissue culture
5	Source of planting material	Sheel Bio. Tech., New Delhi
6	Number of plants planted	6573
7	Date of planting	2012-13
8	Number of plants survived (also indicate percentage survival)	6573
9	Total amount of subsidy assistance due to the beneficiary (Rs)	Not given
10	Amount paid & date of payment	
11	Mode of Payment	
12	Source of irrigation water	Tube well
13	Whether Drip, Sprinkler system in use	Large volume sprinkler
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	Prumset & boring
18	Available marketing facility for the crop	Barabanki, Calcutta

19	Other infrastructure available in the vicinity	
20	General upkeep of the plot (Very good/Good/ Average/Poor)	good
21	Any other relevant observations by the JIT	Intercrop with vegetables

8.Check list for Reviewing Progress on NMMIby joint inspection

1.	Name & address of beneficiary visited.	Vidya Sagar Chaudhary, , Blcok Khora Village Kheria Khora
2.	Total land available with the beneficiary (ha)	1.88 ha
3.	Type of MI system availed Drip/Sprinkler	Sprinkler Large Volume
4.	Crop (s) Covered	1.88
5.	Total area covered (ha)	1.88
6.	Crop Spacing (for drip)	10*5 m
7.	Year of establishment	2011-12
8.	Name of Manufacturer/Supplier	Ajay industrial Corporation,New Delhi Agro India Katihar
9.	Total subsidy paid & date of payment	Rs 39407
10.	Mode of payment	A/c Cheque
11.	Status of crop	Average
12.	General up keep (Very good/Good/Average/Poor)	Average
13.	Any other relevant observation by JTT	Maienance no proper

9.Check list for Reviewing Progress on NMMIby joint inspection

Sr. No.	Detail	Remarks
1.	Name & address of beneficiary visited.	Viveka Chaudhary,Khoda,Katihar
2.	Total land available with the beneficiary (ha)	2.00 ha.

3.	Type of MI system availed Drip/Sprinkler	Drip
4.	Crop (s) Covered	Mango (Amrpali)
5.	Total area covered (ha)	2.00
6.	Crop Spacing (for drip)	5*5 m
7.	Year of establishment	2011-12
8.	Name of Manufacturer/Supplier	
9.	Total subsidy paid & date of payment	20824
10.	Mode of payment	A/c Cheque
11.	Status of crop	Good
12.	General up keep (Very good/Good/Average/Poor)	Good
13.	Any other relevant observation by JTT	

10.Production of Planting Material:Nursery

Sr. No.	Details	Remarks
1	Name of the project	Model Nursery
2	Year of implementation	2010-11
3	Project period	
4	Name of implementing agency	Sri Sunil Kumar Jha
5	Location of Project	Rampur Kamal Rampur Block Haragam
6	Total project cost	18.00 lakh Bank ended
7	Amount released by DAC	5.00 lakh
8	Expenditure incurred	5.00 lakh
9	**State of project**	Project is in 1 st year
	• Name of Nursery and crop for which plants are produced	Mango, Litchi, Guava & other ornamental plant

	• Name of crops for which seeds produced	Details not ginen
	• Quantity produced	
	• Quantity sold	
	• Rate	
	• Amount realized through sale	
	• Whether NHM logo displayed	yes

11.Bamboo Mission:

Sr. No.	Details	Remarks
1	Name of the project	Bambo Whole sale & Retail Market
2	Year of implementation	2011 -2012
3	Project period	Sri shankar Pal Jaiswal
4	Name of implementing agency	Kheria, Khora
5	Location of Project	
6	Total project cost	16.00 lakh
7	Amount released by DAC	No payment
8	Expenditure incurred Status	
9	**status**	
	• Capacity of Unit	
	• Commodity	
	• Condition of Infrastructure	At lirital level
	• Whether NHM logo displayed	Yes
	• Whether funds disbursed to agency	no

District Photo Katihar

Tissue culture hardening of Banana Var.G-9

Tissue culture banana plantationin farmers field

Tissue culture banana plantationin farmers field

Brinjal as intercrop in banana orchard in first year plantation

Collection of banana bunches for sale at road side

Heap of Banana bunches for road side auction sale

Newly planted Mango cv.Lungra in farmers field

2nd year plantation of Mango mixed with Litchi and Guava

Drip Irrigation placed in newly established mango orchards

Established Mango orchard in farmers field (2006-07)

Makhana plantation in shallow pond

Processing of mkhana product with traditional systemat Bhatti

Low coast traditional system of makhana processing

Poly house constructed for vegetable production

Poly house constructed for vegetable prodcution

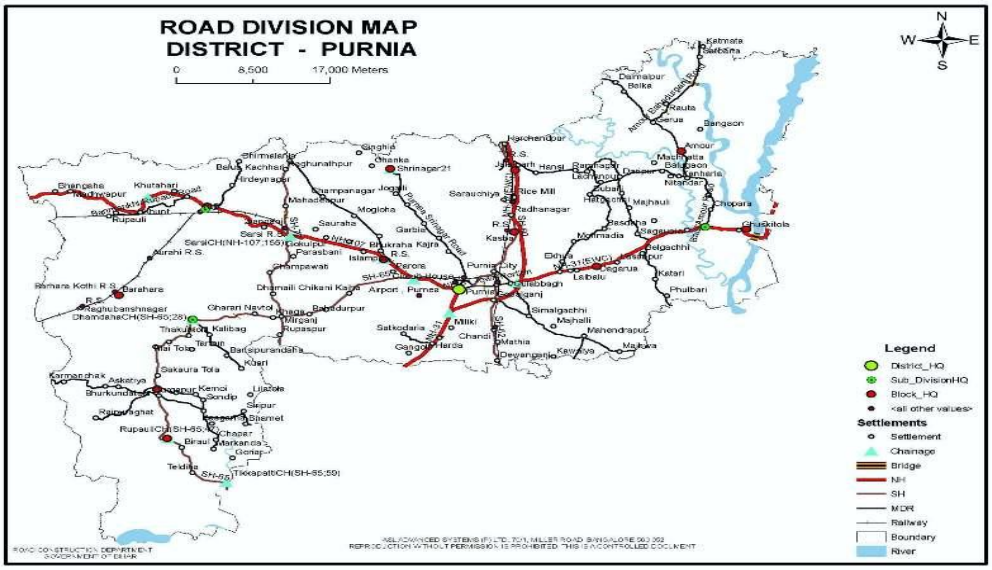
Shade net for establishment of nursury of fruit Plants

Nursury established at private sector(farmer field)

Friut plant Seeding for sale in nursery

Purnea Distict:

The district of Purnia, as it existed in 1951 with an area of 12784.64 sq. km. and a population of 25,25,231 has been pre-eminently an agricultural district.After separating the Katihar District, the area of Purnia District was 7943 sq. km. The district was split two more districts namely Araria and Kishanganj. Present area of the Purnia District is 3202.31 sq. kms. and bordering Araria district in north, Katihar and Bhagalpur district in South, West Dinajpur district of W.B. and Kishanganj district in east and Madhepura and Saharsa District in the west. It is situated between 25 degree 13 minutes 80 seconds and 27-degree 7 minutes 59 seconds north latitude and between 86 degree 59 minutes 6 seconds and 87-degree 52 minutes 35 seconds east longitude. Purnia district has four subdivisions: Purnea , Baisee , Banmankhi and Dhumdaha and they are further composed of fourteen blocks namely East Purnea,Krityanand Nagar, Banmankhi, Kaswa, Amaur, Bainsi, Baisa, Dhamdaha, Barhara Kothi, Rupauli, Bhawanipur, Dagarua, Jalalgarh and Srinagar. Rural Area: 2800.10 sq. kms.



Climate and Soil:

The district has a moist humid climate. The temperature is highest in May, when mercury shoots up to 45.5 degree Celsius and lowest in January when it is only 8.8 degree Celsius. The Wettest months of the year are July and August. The average annual rainfall in the district is 1411.5 mm which is the highest rainfall in the state of Bihar. The winter starts in November and

continues up to February. Summer starts from April and lasts up to June. Rains start from 15th May and cool the temperature. Purnia is popularly known as poor man's Darjeeling.

Normal Rainfall: 1,470.4 mm
Avg. Number of Rainy Days: 73 Days in a Year
Average Temperature: 28°C(maximum: 48°C and Minimum: 03°C)

Soil and Crops

It is a level, depressed tract of country, consisting for the most part of a rich, loamy soil of alluvial formation. The soil of the district can be called alluvial or Sandy loam. As the river Kosi popularly known as "River of sorrow" used to flow in the plains of district freely and used to change its course frequently from time to time, the district has the Soil by recent alleviation. It is traversed by several rivers flowing from the Himalayas, which afford great advantages of irrigation and water-carriage. Its major rivers are the Kosi, the Mahananda, the Suwara Kali and the Koli. In the west the soil is thickly covered with sand deposited by changes in the course of the Kosi. Among other rivers are the Mahananda and the Panar. Its major agricultural products are jute and banana.The soil and climate of the district is suitable for fruit plants like coconut, Banana, Mango, Guava, Lemon, Jeck Fruit, Pineapple and banana.

Economy

In 2006 the Ministry of Panchayati Raj named Purnia one of the country's 250 most backward districts (out of a total of 640). It is one of the 36 districts in Bihar currently receiving funds from the Backward Regions Grant Fund Programme (BRGF). Cash crops such as vegetables and water-melons are also grown.A large commercial complex called ' Abha Complex ' is being set up at Line Bazar.

Report on Visit of JIT at Purnea district of Bihar

Sr. no.	Name of the Farmers/Organization& Address	Crop/Variety/ equipment	Area	Remark
1	Pankaj internatinal growth center mango	Mushroom (Agricus baiosporus)	3.5 Acre	They need technical manpower for spwan production.
2	Hazari Fruit Nursery, Banmankhi, Purnia	Mango, Litahi, Guava	1 Hac.	Needs proper maintenance and labelling in field.
3	Sri Cold Storage ,Marany ,Purnea	Potato	2 Acre	No Board of NHM and not maintained properly
4	Jwala prasad Mandal ,Sripur Block Bhawanipur	Banana Tistue culhre	2 acre	Honeybee unit installed.Bee queen from Hazipur
5	Achal Kumar Mandal ,Giddha, Block Rupawli	Banana Tistue Culpuri	3 acrea	Organic cultivation of tissue culture Banana
6	Mahendra Pal. Mahto ,Baniapal Block R.Nagor Purnea	Litchi	1 Hac. (2.5 acre)	Well established litchi orchard
7	Jugal Kishor Yadav. Madhubani, Yadav Tola Punea	Mango- Mandal-150 Bombay-40	2 Hac.	Well maintained
8	Kalanand Thakur At Block Raha, Block R. Naror Purnea	Mango	5.2 acre	Well maintained orchard.

1. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Pankaj internatinal growth center mango
2	Total land available with the beneficiary	3.5 Acre
3	Crop cluster under which covered	Laboratory
4	Name & variety of crop planted	Mushroom (Agricus baiosporus)
5	Source of planting material	NABARD
6	Number of plants planted	
7	Date of planting	Sprown in plastic bags on wheat seed media
8	Number of plants survived (also indicate percentage survival)	
9	Total amount of subsidy assistance due to the beneficiary (Rs)	25 lakh saoil 50% atheced
10	Amount paid & date of payment	25 lakhs
11	Mode of Payment	A/c payee cheque No. 75514/30.5.11 Bank Loan 1.15 recovery
12	Source of irrigation water	
13	Whether Drip, Sprinkler system in use	
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	
18	Available marketing facility for the crop	
19	Other infrastructure available in the vicinity	
20	General upkeep of the plot (Very good/Good/ Average/Poor)	
21	Any other relevant observations by the JIT	

2. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Hazari Fruit Nursery Banmankhi Purnia
2	Total land available with the beneficiary	1 Hac.
3	Crop cluster under which covered	
4	Name & variety of crop planted	Mango, Litahi, Guava
5	Source of planting material	BAU, Sabour
6	Number of plants planted	1.00
7	Date of planting	2010-11
8	Number of plants survived (also indicate percentage survival)	
9	Total amount of subsidy assistance due to the beneficiary (Rs)	1.50 lakh
10	Amount paid & date of payment	1.50 lakh
11	Mode of Payment	A/c Payee Cheque Back ended subsidy
12	Source of irrigation water	Bore well
13	Whether Drip, Sprinkler system in use	
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	
18	Available marketing facility for the crop	
19	Other infrastructure available in the vicinity	
20	General upkeep of the plot (Very good/Good/ Average/Poor)	
21	Any other relevant observations by the JIT	

3. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Sri Cold Storage Marany Purnea
2	Total land available with the beneficiary	2 Acre
3	Crop cluster under which covered	
4	Name & variety of crop planted	Potato storage
5	Source of planting material	
6	Number of plants planted	
7	Date of establishment	2011-12
8	Number of plants survived (also indicate percentage survival)	7000 M.T. (Capacity)
9	Total amount of subsidy assistance due to the beneficiary (Rs)	50 lakh
10	Amount paid & date of payment	50 lakh
11	Mode of Payment	A/c Payee Cheque No. 75504/31.3.11
12	Source of irrigation water	Bank Loan 2 crore
13	Whether Drip, Sprinkler system in use	
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	
18	Available marketing facility for the crop	
19	Other infrastructure available in the vicinity	
20	General upkeep of the plot (Very good/Good/ Average/Poor)	
21	Any other relevant observations by the JIT	

4. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

Name & address of beneficiary whose field visited	Achal Kumar Mandal At- Giddha, Block Rupawli Purniea.
Total land available with the beneficiary	3 acrea
Crop cluster under which covered	Banana Tistue Culpuri
Name & variety of crop planted	G.9
Source of planting material	Seel Bio-Tech
Number of plants planted	3708
Date of planting	2010-11
Number of plants survived (also indicate percentage survival)	3694
Total amount of subsidy assistance due to the beneficiary (Rs)	89859.00
Amount paid & date of payment	
Mode of Payment	
Source of irrigation water	Drip installed by NETAFEM
Whether Drip, Sprinkler system in use	Drip-Total Subsidy
Other inputs provided	90% Rs. 91898 G.O Rs. 51054.00 S.S. Rs 40844.00
Whether assistance availed for Organic farming	
If so, Area covered	
Assistance availed	
Available marketing facility for the crop	
Other infrastructure available in the vicinity	
General upkeep of the plot (Very good/Good/ Average/Poor)	
Any other relevant observations by the JIT	

5. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Mahendra Pal. Mahto Baniapal Block R.Nagor Purnea
2	Total land available with the beneficiary	1 Hac. (2.5 acre)
3	Crop cluster under which covered	Litchi
4	Name & variety of crop planted	Shahi
5	Source of planting material	Private Nursery. Marked by State Horticulture mission Bihar
6	Number of plants planted	100
7	Date of planting	2011-12
8	Number of plants survived (also indicate percentage survival)	100
9	Total amount of subsidy assistance due to the beneficiary (Rs)	22500/ 07.08
10	Amount paid & date of payment	Rs. 7850(3.1.08) Rs. 4500 (25.2.09) Rs. 6750(23.8.10)
11	Mode of Payment	Cheque No. 437099, 861003, 820953
12	Source of irrigation water	Tube well
13	Whether Drip, Sprinkler system in use	
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	
18	Available marketing facility for the crop	Local
19	Other infrastructure available in the vicinity	
20	General upkeep of the plot (Very good/Good/ Average/Poor)	
21	Any other relevant observations by the JIT	

6. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Yugal Kishor Yadav Madhubani, Yadav Tola Punea
2	Total land available with the beneficiary	2 Hac.
3	Crop cluster under which covered	Area expansion(New Orchard)
4	Name & variety of crop planted	Mango- Mandal-150 Bombay-40
5	Source of planting material	Gromore Nursery (Private)Purnea Verified and marked to supply plant by State Horticulture Mission
6	Number of plants planted	190
7	Date of planting	2012-13
8	Number of plants survived (also indicate percentage survival)	190
9	Total amount of subsidy assistance due to the beneficiary (Rs)	4275.00(Including plant cost)108.09
10	Amount paid & date of payment	Rs.15675 (21.9.9) 8550 (23.8.10) 12825 (19.7.12)
11	Mode of Payment	
12	Source of irrigation water	Bore well
13	Whether Drip, Sprinkler system in use	
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	
18	Available marketing facility for the crop	
19	Other infrastructure available in the vicinity	
20	General upkeep of the plot (Very good/Good/ Average/Poor)	
21	Any other relevant observations by the JIT	

7. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Kalanand Thakur Raha, Block K. Nagor Purnea
2	Total land available with the beneficiary	5.2 acre
3	Crop cluster under which covered	Mango
4	Name & variety of crop planted	Malhah, Bombay
5	Source of planting material	Private Nursery (Gramer) marked to supply planting verified by State Horticulture Mission
6	Number of plants planted	220
7	Date of planting	2012-13
8	Number of plants survived (also indicate percentage survival)	220
9	Total amount of subsidy assistance due to the beneficiary (Rs)	49500
10	Amount paid & date of payment	Rs. 15950 (2.9.9) Rs 9900 (23.8.10) Rs. 14700 (29.1.11)
11	Mode of Payment	A/c Payee Cheque No. 655740 821014 50946
12	Source of irrigation water	
13	Whether Drip, Sprinkler system in use	
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	
18	Available marketing facility for the crop	
19	Other infrastructure available in the vicinity	
20	General upkeep of the plot (Very good/Good/ Average/Poor)	
21	Any other relevant observations by the JIT	

Purnea district photo

Established Litchi Garden as nursery Mother Block

Banana CV .G9 Orchard (2012-13)

Banana bunch stored at Road side for sale

Nursery seedings packed for supply to farmers

Nursery Board and shadenet area

Nursery plants in farmers field

Nursery seedings packed for supply to farmers

Honeybee rearing in farmers field

Micro irrigation unit in farmers field (2011-12)

Makhana grain stored for processing

Processing of Makhana by traditional method

Meeting with KVK, Purnea

Kishanganj District:

Kishanganj district occupies an area of 1,884 square kilometres Kishanganj district is surrounded by Araria district in the west, Purnia district in the south-west, Uttar Dinajpur district of West Bengal on the east, and Darjeeling district of West Bengal and Nepal on the north. A narrow strip of West Bengal, about 20 km wide separates it from Bangladesh.Kishanganj district is located between 25^0 20' and 26^0 30' north latitudes, and 87^0 7' and 88^0 19' east longitudes. According to the 2011 census Kishanganj district has a population of 1,690,948.A vast majority of the people live in the villages. About 70% population consists of in the district. The district comprises only one sub-division, Kishanganj, which is further divided into seven blocks: Bhahadurganj, Dighalbank, Kishanganj, Kochadhaman, Pothia, Terhagachha, Thakurgunj. Major rivers flowing through the district are Mahananda, Kankai, Mechi, Donk, Ratua and Ramzan Sudhani. The district comprises only one sub-division, Kishanganj, which is further divided into seven blocks: Bhahadurganj, Dighalbank, Kishanganj, Kochadhaman, Pothia, Terhagachha, Thakurgunj.In 2006 the Ministry of Panchayati Raj named Kishanganj one of the country's 250 most backward districts It is one of the 36 districts in Bihar currently receiving funds from the Backward Regions Grant Fund Programme.

Agriculture Census:

Agriculture land 173574 ha.

Cultivable land 163494 ha.

Waste land 19292 ha.

Upland 33700 ha.

Midland 50700 ha.

Lowerland 42079 ha.

Deepland 42195 ha.

Horticultural Crops:

Fruits:

Crop	Area(ha.)	Crop	Area
Mango	597	Guava	288
Banana	205	Litchi	409
Pineapple	2000		

Vegetables and others:

Crops	Area(ha.)	Crops	Area(ha.)
Tomato	823	Bhindi	788
Cauliflower	818	Onion	1366
Cabbage	536	Potato	6200
Brinjal	538	Chillies	559
Cucurbits	672	Pea	157
Ginger	50	Bayleaf	200

Report on Visit of JIT at kishanganj district of Bihar :

Sr. no.	Name of the Farmers/Organization& Address	Crop/Variety/ equipment	Area	Remark
1	Mohamad Khalilur Rehmaan S/o Late Mohamad kaalu village Block- Kishanganj.	Mango/honey bee	1.00ha.	Trained by bee board.Well managed.
2	Mohamad Abdul Kalam Rehmaan S/o Abdul Bahav Village chatter katora Block- Thakurganj	Honey bee	60 boxes	Needs end to end approach
3	Mohamad Aaftabudhin S/o Late Dhakan Ali Village gidhinghor sakhuadaali block thakurganj, Kishanganj	Pineapple Cv.Kew	4 ha.	
4	Mohamad farizuddin S/o Late Imaan Ali Village Behbuldangi, Kanakpur block, Thakurganj Kishanganj	Pineapple	2 ha.	
5	Surender Prasad Singh S/o Late Ram Lal Singh V+P Pathriya block Thakurganj, Kishanganj	Pineapple	1.20 ha.	Sole crop in fruiting stage
6	Mohamad Manjur Aalam S/o of Late Kamrujjama Village Behbuldaangi P-Kanakpur block Thakurganj, Kishanganj	Pineapple	4 ha.	Intercrped with banana
7	Dinbandhu Das S/o Late Shri Ghistu Das V+P Raipur block pothiya, kishanganj	Pineapple	1.00 ha.	Intercroped with bayleaf.
8	Manoj Kumar Singh S/o Late Shankar Singh Village- Nayatola ButiJhadi besarwadi block Thakurganj	Pineapple	1.79 ha.	crop in fruiting stage
9	Om Parkash Saah S/o Shri Raajballab Saah, Power House Churli block Thakurganj, KIshanganj	Pineapple	1.00 ha.	Intercroped with bayleaf
10	Ajay Kumar Singh S/o Raghunath Singh pathriya block Thakurganj Kishangaj	Pineapple	1.38ha.	Sole crop

1. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Md.Kaleerul Rahman,Village.Bahirkekam, Block- Kishan Ganj
2	Total land available with the beneficiary	1.00 hec
3	Crop cluster under which covered	2.00 hec
4	Name & variety of crop planted	Mango-Amarapali-30, Mumbai-20, Malika-30, Maaldah-20, Total-100
5	Source of planting material	Private Nursury
6	Number of plants planted	100
7	Date of planting	2010-11
8	Number of plants survived (also indicate percentage survival)	90%
9	Total amount of subsidy assistance due to the beneficiary (Rs)	22500
10	Amount paid & date of payment	22500
11	Mode of Payment	Planting material+Amount A/c Payee Cheque
12	Source of irrigation water	Bore well
13	Whether Drip, Sprinkler system in use	Drip Irrigation
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	
18	Available marketing facility for the crop	Local
19	Other infrastructure available in the vicinity	
20	General upkeep of the plot (Very good/Good/ Average/Poor)	Good
21	Any other relevant observations by the JIT	

2. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Md.Abdul Kalam,Village – Chattrakatora,Block -Thakurganj
2	Total land available with the beneficiary	60 boxes
3	Crop cluster under which covered	270 Boxes
4	Name & variety of crop planted	Honey bee
5	Source of planting material	Sonam enterprises, Hojipur, Bihar
6	Number of plants planted	
7	Date of planting	
8	Number of plants survived (also indicate percentage survival)	
9	Total amount of subsidy assistance due to the beneficiary (Rs)	48,600
10	Amount paid & date of payment	48,600
11	Mode of Payment	Honey bee box with bee
12	Source of irrigation water	
13	Whether Drip, Sprinkler system in use	
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	
18	Available marketing facility for the crop	
19	Other infrastructure available in the vicinity	Fruit Ochard
20	General upkeep of the plot (Very good/Good/ Average/Poor)	Good(Av 35kg.honey)
21	Any other relevant observations by the JIT	

3. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Md.Aftabuddin,Village-Ghigingo,Block-Thakur Ganj
2	Total land available with the beneficiary	40 hec
3	Crop cluster under which covered	50 hec in the area
4	Name & variety of crop planted	Pineapple Cv.Kew
5	Source of planting material	Near market mandi
6	Number of plants planted	15,000
7	Date of planting	2011-12
8	Number of plants survived (also indicate percentage survival)	85%
9	Total amount of subsidy assistance due to the beneficiary (Rs)	16,900
10	Amount paid & date of payment	16,900 Dated 27.05.2012
11	Mode of Payment	By A/c Payee Cheque
12	Source of irrigation water	Bore well
13	Whether Drip, Sprinkler system in use	
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	
18	Available marketing facility for the crop	Near market mandi
19	Other infrastructure available in the vicinity	
20	General upkeep of the plot (Very good/Good/ Average/Poor)	Very Good
21	Any other relevant observations by the JIT	Bay leaf as inter crop.

4. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Md.Faziuddin,Village-Bahbuldangi,Block-Thakur Ganj
2	Total land available with the beneficiary	20 hec
3	Crop cluster under which covered	8 hec
4	Name & variety of crop planted	Pineapple & que
5	Source of planting material	Self+other farmer
6	Number of plants planted	32,000 / hec=6400
7	Date of planting	32,000 / hec=6000
8	Number of plants survived (also indicate percentage survival)	80%
9	Total amount of subsidy assistance due to the beneficiary (Rs)	7,800
10	Amount paid & date of payment	7800 Dated 27.5.2012
11	Mode of Payment	By A/c payee cheque
12	Source of irrigation water	Bore well
13	Whether Drip, Sprinkler system in use	
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	
18	Available marketing facility for the crop	Near market mandi
19	Other infrastructure available in the vicinity	
20	General upkeep of the plot (Very good/Good/ Average/Poor)	
21	Any other relevant observations by the JIT	

5. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Surendra Pratap Singh,Village-Patharia,Block-Thakur Ganj
2	Total land available with the beneficiary	1.20 hec
3	Crop cluster under which covered	20 hec
4	Name & variety of crop planted	Pineapple & que
5	Source of planting material	Near market mandi
6	Number of plants planted	42,000
7	Date of planting	37,000
8	Number of plants survived (also indicate percentage survival)	88%
9	Total amount of subsidy assistance due to the beneficiary (Rs)	48,100
10	Amount paid & date of payment	48,100 dated 27.5.2012
11	Mode of Payment	By A/c payee cheque
12	Source of irrigation water	Bore well
13	Whether Drip, Sprinkler system in use	
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	
18	Available marketing facility for the crop	Near market mandi
19	Other infrastructure available in the vicinity	
20	General upkeep of the plot (Very good/Good/ Average/Poor)	
21	Any other relevant observations by the JIT	

6. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Md.Manjur Alam,Village-Bahbuldangi,Block-Thakur Ganj
2	Total land available with the beneficiary	60 hec
3	Crop cluster under which covered	8 hec
4	Name & variety of crop planted	Pineapple & que
5	Source of planting material	Near market mandi
6	Number of plants planted	20,000
7	Date of planting	18,000
8	Number of plants survived (also indicate percentage survival)	90%
9	Total amount of subsidy assistance due to the beneficiary (Rs)	23,400
10	Amount paid & date of payment	23,400 dated 27.5.2012
11	Mode of Payment	By A/c payee cheque
12	Source of irrigation water	Bore well
13	Whether Drip, Sprinkler system in use	
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	
18	Available marketing facility for the crop	Near market mandi
19	Other infrastructure available in the vicinity	
20	General upkeep of the plot (Very good/Good/ Average/Poor)	
21	Any other relevant observations by the JIT	

7. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Deen Bandhu Das ,Village-Raipur,Block-Pothia
2	Total land available with the beneficiary	1.00 hec
3	Crop cluster under which covered	6.00 hec
4	Name & variety of crop planted	Pineapple & que
5	Source of planting material	North Eastern Regional Marketing corporation Guwahati, Assam
6	Number of plants planted	13,000
7	Date of planting	45000
8	Number of plants survived (also indicate percentage survival)	90%
9	Total amount of subsidy assistance due to the beneficiary (Rs)	58500
10	Amount paid & date of payment	
11	Mode of Payment	Planting material
12	Source of irrigation water	Bore well
13	Whether Drip, Sprinkler system in use	
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	
18	Available marketing facility for the crop	Near market mandi
19	Other infrastructure available in the vicinity	
20	General upkeep of the plot (Very good/Good/ Average/Poor)	
21	Any other relevant observations by the JIT	

8. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Manoj Kumar Singh ,Village-Nayatola,Block-Thakurganj
2	Total land available with the beneficiary	1.769 hec
3	Crop cluster under which covered	20 hec
4	Name & variety of crop planted	Pineapple & que
5	Source of planting material	North Eastern Regional Marketing corporation Guwahati, Assam
6	Number of plants planted	23,000
7	Date of planting	79,605
8	Number of plants survived (also indicate percentage survival)	90%
9	Total amount of subsidy assistance due to the beneficiary (Rs)	103486
10	Amount paid & date of payment	
11	Mode of Payment	Planting material
12	Source of irrigation water	Bore well
13	Whether Drip, Sprinkler system in use	
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	
18	Available marketing facility for the crop	Near market mandi
19	Other infrastructure available in the vicinity	
20	General upkeep of the plot (Very good/Good/ Average/Poor)	
21	Any other relevant observations by the JIT	

9. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Om Prakash Shah ,Village-powerthau,Block-Thakurganj
2	Total land available with the beneficiary	1.00 hec
3	Crop cluster under which covered	4 hec
4	Name & variety of crop planted	Pineapple & que
5	Source of planting material	North Eastern Regional Marketing corporation Guwahati, Assam
6	Number of plants planted	13,000
7	Date of planting	45,000
8	Number of plants survived (also indicate percentage survival)	85%
9	Total amount of subsidy assistance due to the beneficiary (Rs)	45,000
10	Amount paid & date of payment	
11	Mode of Payment	Planting material
12	Source of irrigation water	Drip
13	Whether Drip, Sprinkler system in use	
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	
18	Available marketing facility for the crop	Near market mandi
19	Other infrastructure available in the vicinity	
20	General upkeep of the plot (Very good/Good/ Average/Poor)	
21	Any other relevant observations by the JIT	

10. Check list for Reviewing Progress on Area Expansion and Rejuvenation Activities under National Horticulture Mission (NHM) by joint inspection

1	Name & address of beneficiary whose field visited	Abhya Kumar Singh ,Village-Patharia,Block-Thakurganj
2	Total land available with the beneficiary	1.384 hec
3	Crop cluster under which covered	12 hec
4	Name & variety of crop planted	Pineapple & que
5	Source of planting material	North Eastern Regional Marketing corporation Guwahati, Assam
6	Number of plants planted	18,000
7	Date of planting	62,280
8	Number of plants survived (also indicate percentage survival)	85%
9	Total amount of subsidy assistance due to the beneficiary (Rs)	81,000
10	Amount paid & date of payment	
11	Mode of Payment	Planting material
12	Source of irrigation water	Bore well
13	Whether Drip, Sprinkler system in use	
14	Other inputs provided	
15	Whether assistance availed for Organic farming	
16	If so, Area covered	
17	Assistance availed	
18	Available marketing facility for the crop	Near market mandi
19	Other infrastructure available in the vicinity	
20	General upkeep of the plot (Very good/Good/ Average/Poor)	
21	Any other relevant observations by the JIT	

District: Kishanganj

Honeybee boxes established in farmers field

Pineapple suakers (CV. Kew) planted (2012-13)

Pineapple in fruiting in farmers field

Pineapple inter cropped with Banana planted (2012-13)

Micro irrigation unit placed in pure apple field

Banan CV G9 planted 2012-13 in farmers field

Bihar State:

Bihar is the fifth largest state in India in terms of area and holds second position in population. The name 'Bihar' is a corrupt form of the name' Vihara' which means a Buddhist monastery. Bihar lies between 27°31' -21°58'N latitude and 88°18- 88°20'E longitude and covers a total geographical area of 17.38 million hectares of which 57.86% is the actual farmed area, 8.03% is unutilizable land and 16.90% under forest. The north Bihar is lined with many rivers and canals while a good amount of area of south Bihar is plateau. Besides south Bihar is also a forest area having some of the great sal forests in our country. It is also an area predominantly inhabited by tribals

Bihar has a geographical area of 94,163 Sq km (2.85% of the country) and is located in the eastern part of the country. It is bordered on the north by the Kingdom of Nepal, on the west by Uttar Pradesh, South by Jharkhand and East by West Bengal. The cropping system in the state shows predominance of cereals i.e. mainly rice. Seeing the overall performance of the soils of the state, use of biofertilizers and organic manures should be encouraged. These wins help in increasing the fertility as well as productivity of the soil. In some areas of the state there is also the problem of flooding and water logging, which needs proper management and care for future agricultural use of the soil. This booklet describes the different types of soils of Bihar and their management practices briefly.Under Horticultural Crops Bihar ranks 8th in respect of area (11.21 lakh hectares) and 5th in respect of production (173.35 lakh MT) in the country with regard to total area (2.86 lakh) and production of fruits, the state ranks sixth and seventh respectively. In respect of area (8.24 lakh) and production (140.68 MT) of vegetable, Bihar ranks third in the country. Considering the area (200h) and production of loose flowers (2300 MT)and cut flowers to the tune of 10.60 lakh in number only showing infant stage in Bihar. As far as the area under major spices the state has 11100 ha with the production of 12300 MT sharing only 0.3% in the country.Major fruits grown in the state are Mango, Litchi, Guava, Pineapple, Banana, Aonla, Bel and Makhana. The prime growing areas are Muzaffarpur, Vaishali, Samastipur, Bhagalpur, Banka, Darbhanga, Munger, Jamui, Gaya, Aurangabad, Nalanda, Patna, West Champaran, East Champaran, Kishangaj, Purnea, Araria, Katihar and Khagaria districts. The major vegetables grown on commercial scale in the state are Cauliflower, Okra, Brinjal, Onion, Chillies, Cabbage, Gourds, Peas, Cowpea and Melons. Betelvine is planted in Muzaffarpur, Vaishali, Samastipur, Darbhanga, Madhubani, Nalanda Khagaria, Katihar and Araria districts.The launching of National Horticulture Mission has come as an opportunity for the state to develop concentrated pockets of plantation, rejuvenation of old orchards and creation of post harvest and marketing infrastructure. Accordingly, concentrated pockets of major crops have been identified in four clusters of twenty three districts in the year 2006-07 and 2007-08 for implementation of the mission programme.

As such, the development strategy designed is based on present crop versus area matrix. The cluster of areas and crops selected are:

Sl. No	Cluster	Crops	Districts
	Cluster – I	Mango	West Champaran, East Champaran, uzaffarpur, Samastipur, aishali, Darbhanga,Madhubani, Begusarai.
		Litchi	West Champaran, East Champaran,Muzaffarpur, Vaishali.
		Banana	, Darbhanga, Muzaffarpur,Khagaria
		Guava	Madhubani, Beg usarai
		Betelvine	West Champaran, East Champaran, Vaishali,Madhubani, Begusarai, Jamui

Agro-Climatic Zone:

The State of Bihar is divided into three physiographic region: 1) the north Bihar plains, 2) the south Bihar plains, and 3) Chhotanagpur and Santhal Paraganas plateau. They are briefly described here.

1. North Bihar plains

North Bihar plains consist of fifteen districts and is spread over 5.4 million hectares. The topography of this area is practically levelled with a slope towards south-east. Several big rivers such as Ganges, Gandak, Kosi, Kamala balan and Baghmati regularly flood this area. In north Bihar plain all the districts excepts Champaran are devoid of forests. However, the soil in this area is comparatively a fertile though saline and alkali problems are common.

2. South Bihar plains

Southern plain of Bihar consists of nine districts and covers an area of about 4.0 million hectares. Its topography slopes towards north and most of the streams flow northward and join the Ganges as tributaries. The southern plains has many important rivets such as Son, Punpun and Falgu.

3. Chhotanagpur and Santhal Panganas plateau

Chhotanagpur and santhal paraganas plateau, though consists of only seven districts, covers It has the largest geo- graphical area of about 8.0 million hectares. This region consists of several plateau having altitudes varying from 300 to 1000 metres above mean sea level with valleys in between them. Several rivers such as Damodar, Suvamarekha, Barakar, Koel etc. flow through this region. The

plateau has large proportion of land under forest which is highest in district of Palamau (48.05%), followed by Hazaribagh (40.17%) and Singhbhum (29.07%) districts.

Though the population of Chotanagpur and Santhal Paragana consists of a wide variety of ethnic composition, a large number of scheduled tribes are found there.

Land Utilization Pattern:

The percentage of actually farmed land comprising of net sown area and current fallow is above the state average in all the districts lying in north and south Bihar plain. In Chhotanagpur plateau, all the districts have less than 55% of actual farmed land. Patna district has the highest percentage of farmed land (80.58%) while it is lowest (29.93%) in Hazaribagh district.

Of the total reported area of the state, 12.46% is under irrigation while 15.98% area is sown more than once. The districts lying in plains have a higher proportion of irrigated land than the plateau region. Consequently, the plains have larger areas under double or triple crops than the plateau region. The south Bihar is also very rich in minerals and coal. This state supplies almost 40% of the mineral resources.

The land utilization pattern in Bihar as shown in table 1 provides more details such as reporting area, land not avail- able for cultivation, etc.

Agro-Climatic Zones of Bihar:

Agro Climatic Zones	Districts	Area(,000ha.)	Average Rainfall (MM)	Soil and Topography	Main Crops
Zone -I North West Alluvial Plains	Bettiah, Motihari, Gopalganj, Siwan, Vaishali, Seohar, Muzaffarpur, Samastipur, Sitamarhi, Madhubani, Darbhanga, West & East Champaran	Net Cultivated-2281 Gross Cultivated 3260	1234.7	Medium acidic, heavy textured, sandy loam to clayed, flood prone. (Large area remains under water called Chaur, Maun & Tal lands)	**Hort. Crops** Litchi, Mango, Makhana, Water Chestnut
Zone - II North East Alluvial Plains	Purnea, Katihar, Saharsa, Madhepura, Araria, Kishanganj, Supaul, Khagaria, Begusarai	Net Cultivated–1147 Gross cultivated 1677	1382.2	Light to medium textured, slightly acidic, sandy to silty loam. (large area	**Hort. Crops** Mango, Bel, Banana, Papaya, Cucurbit, Chilly,

				comprise of Tal and Diara lands)	Turmeric, Potato
Zone - III South Bihar Alluvial Plains	Patna, Gaya, Buxar, Jehanabad, Nawada, Nalanda, Rohtas, Bhojpur, Aurangabad, Kaimur, Banka, Munger, Jamui, Lakhisarai, Shekhpura, Bhagalpur	Net Cultivated–241 Gross cultivated 3408	1102.1	Old alluviam to sandy loam.	**Hort. Crops** Mango, Guava, Banana, Bael, Jackfruit, Onion, Potato, Chillies, Marigold

Land utilization pattern in Bihar

Sl.No.	**Land Use**	**Area (m.ha)** [1]	**Area (%)**
1	Total geographic area	17.38	-
2	Reporting area for land utilization statistics	17.33	-
3	Forest	2.88	16.61
4	Not available for cultivation	2.71	15.81
5	Other uncultivated land excluding fallow land	0.81	4.61
6	Fallow land	3.02	17.42
7	Net are sown	7.86	45.35
8	Area sown more than once	2.77	15.98
9	Total cropped area	10.63	61.33

1. The figures are only rough estimates

Climate and Soil:

The State of Bihar is situated in the monsoon sub-tropical zone hence four distinct seasons can be identified in it namely: summer (March to June), monsoon (June to September), post-monsoon (October to November) and winter (December to Ferlruary). The summer is characterized by a gradual rise in temperature, occasional thunder showers coupled with hailstoms at places and high westerly winds in the north and south Bihar causing dust storms. The maximum temperature recorded is between the latter part of May and first fortnight of June. The monsoon season is characterized by cloudy weather, high humidity, frequent rains and variable surface winds. A maximum average rainfall of 330 mm is received during the month of July-August. The post-monsoon season is characterized by fair weather with a gradual fall in temperature. Winter season is characterized by low temperature with occasional frost at some places.

There are eight clearly distinguishable soil types. They are briefly described here mainly with reference to their location.

i) Red loamy soils: Red loamy soil is found in a small I area of north-eastern Santhal Paraganas.

ii) Red sandy soil: red sandy soil occurs in the districts of Dhandbad, southern portion of Santhal Paraganas, and in a strip along the district boundary of Ranchi and Singhbhum.

iii) Red & yellow soil: red and yellow soil is found in small patches in southern and south-eastern part of Singhbhum district.

iv) Mixed red & black: mixed red and black soil occurs in the central portion of the district of Singhbhum.

v) Alluvial soil: alluvial soil is mainly found in almost the entire north and south Bihar plains except the mid western portion. This soil is most suitable for cultivation of paddy.

vi) Tarai soil: tarai soil is confined to the Siwalik hills of Champaran district.

vii) Calcarious alluvial soil. calcarious alluvial soil containing a high content of carbonate of lime and is found in a vast patch in the mid western portion of north Bihar plain covering parts of Saran, Champaran, Muzaffarpur, Darbhanga and Saharsa districts.

viii) Peaty & saline peaty soil: peaty and saline soil is found in two small patches, one in the central part of Saharsa and the other along the border of Saharsa and Monghyr districts.

1. Sub-Himalayan hill and forest soils

This soil is found in the north-west corner of the state (West Champaran district). It is moderately acidic to neutral in reaction, dark brown to yellow coloured, coarse textured and

shallow to medium deep. Most of the soils are covered by forests with occasional rice fields in the valleys.

These soils are found at the foot hills separating the alluvial plains from the plateau regions extending in the west from Rohtas to Sahebganj in the east. Soils are developed on colluvial deposits in alluvial fans. These are shallow to medium deep, moderately acidic to neutral, poor to moderate in fertility status.

Problem Soils

There are certain specific problem soils in different agro- climatic zones in the state. The saline, saline-alkali and alkali soils have the distinctive characters of having excessive concentration of either soluble salts or exchangeable sodium or both. These soils extend over a major part of Chhapra, Siwan, Gopalganj southern positions of east and west Champaran, Muzaffarpur, Vaishali and part of Samastipur and Darbhanga districts. About one lath hectares in Bihar is affected by saline alkali soil problem.

The calcareous soils of Samastipur and Muzaffarpur districts contain 10-60% of free calcium carbonate ($CaCO3$) with low to medium organic carbon content. The sedimentary soils of Chhotanagpur plateau and large parts of Santhal Paraganas are acidic in reaction and the pH is ranging between 5.5 to 6.5. Such soils occur in an area of about 1.5-2 m ha in Bihar.

About 70% soils of Ranchi, 60% each of Hazaribagh and Dhanbad, 50% of Singhbhum and 20% soils of Palamau districts are acidic in reaction. The acidic soils of Purnea district have developed in the flood plains of Mahananda and Kosi rivers. The continuous and intense leaching of the sandy soils due to heavy rains has caused acidity in these soils. Nearly 50% of the cultivable land of north Bihar (about 1.7 m ha) is frequently affected by floods during rains. Depending upon the physiographic location the period of flooding varies from a few weeks to 3 to 4 months.

Organic matter and nitrogen

Soils of Bihar are generally poor to low in organic matter and nitrogen. Organic carbon varies from 0.027% in sandy soils to 1.8% in sandy loam soil in the *Corai* area. Bulk of the soil nitrogen remains in hydrolisable and non- hydrolisable forms. However, a dynamic equilibrium exists between ammoniacal nitrate, hydrolisable and nonhydrolisable forms of nitrogen. From the study of typical upland soils of Bihar, significant correlation and fairly linear relationship between carbon dioxide evolution, nitrogen mineralisation and organic carbon contents have been found.

2. Phosphorus

The nature and the relative amounts of different phosphorus fractions in Bihar soils, vary greatly in tune with the differences in their genetic and physico-chemical properties. The inorganic phosphorus fractions accounted for about 50% of total phosphorus in sedimentary soils and about 80% in alluvial soils. Organic phosphorus content in soils ranged between 16-46% of the total phosphorus content.

Reversion of added phosphorus to relatively unavailable forms is particularly pronounced in acidic and calcareous soils. The degree of phosphorus fixation in acidic soils is found to be much higher at lower concentrations of applied phosphorus.

3. Potassium

Potassium exists in soil in different forms i.e exchange- able, non-exchangeable, water soluble, weathered and unweathered minerals. In Bihar soils, sand and silt contribute towards total potassium more than the clay whereas clay contributes relatively higher concentration of potassium soluble in nitric acid. The total potassium content of Bihar soils ranges between 23.2 -111.5 eq/l00 gm of soil. Alluvial soils are richer in total potassium content than the sedimentary soils. The activity ratio of water soluble and nitric acid soluble potassium remains more or less unchanged during crop growth.

4. Micro-nutrients

Total content of micronutrients in soils of Bihar vary widely due to difference in mineralogy, physical and chemical properties. In the soils of Bihar total zinc range from 69 to 109 ppm, iron from 0.45 to 27.3 per cent, manganese from 202 to 2710 ppm, molybdenum from 5 to 18 ppm, copper from 9.4 to 25 ppm and boron from 38 to 57.5 parts per million. The micronutrient status of the soils of Bihar indicates wide spread deficiency of zinc followed by the deficiency of iron. These range between 0.5 to 0.9 ppm in soils and from 20 to 30 ppm in crops. The threshold value of iron in calcareous soil is 6.95 parts per million.

Most of the Bihar soils is considered to be poor in available sulphur. Lowland acidic and fine soils contain relatively high total sulphur but less soluble Sulphur.

Crop Status:

Crops identified for implementation under mission programme are Mango, Litchi, Guava, Banana, Pineapple, Bael, Aonla, Makhana and Betelvine. Summary of the physical and financial programmes of plantation/ rejuvenation of orchards and creation of post-harvest infrastructure is given in ensuing table. The total outlay proposed for Annual Action Plan 2010-11 is Rs. 4510.16 lakhs. Good planting material is the first and foremost need for exploration of the commercial horticulture, as such nursery development has been proposed in 14 hectares. Under the Action Plan, 17329 hectares have been proposed for area expansion underMango, Litchi, Guava, Banana, Makhana, Pine Apple and Betelvine. This would provide additional production of 150000 MT (Approx) from an area expansion of 17329 hectares. The programme

is expected to generate additional income of Rs 7090 lakhs/annum. Likewise, development of post-harvest infrastructure and organized marketing through modernization of rural and urban markets would lead to prevention of post- harvest losses up to 5 percent of the production. Generation of employment with area expansion, rejuvenation and creation of nursery would be 30.5 lakhs man days. Capacity building of the local human resource shall further trigger the mechanism of enhancing the production of horticulture produce and having multiplier effect.

Fruits

A. Mango

- Mango is the leading fruit crop with an approximate share of 50 percent of the Total area under fruit crops in the state.
- Third largest producer of mango in the country with Average Productivity (9.30MT/ha) is higher than National Average (6.30 MT/ha)
- The state has advantage of producing wide varieties having very long production spell starting form first fortnight of May to second fortnight of August.
- Important Varieties: Jardalu, Langra, Krishna Bhog, Bombay Green, Chausa, Amarapali.
- Major districts: Darbhanga, Samastipur, Muzzaffarpur, East Champaran, Vaishali, Bhagalpur.l
- Variety Selected for promotion on project basis: Jardalu (Early Maturity Variety-Time of ripening-20th -30th May)
- Selected Districts: Bhagalpur, Darbhanga, Sitamarhi, Sheohar ans Saharsa.
- Major interventions: Area Expansion, Rejuvenation of old orchards, Formation of farmers' group, intercropping with spices, development of collection centre, cool chain.

B. Banana

- Banana is the second major fruit crops grown in Bihar after mango.
- Banana occupies nearly 31 thousand hectares with an annual production of 1.37 million tones.
- Average Productivity (45.0 MT/ha) Bananas in the state viz., the old Vaishali region the new north eastern (Kosi) region. There is a network of as many as seven rivers in the area. This helps in irrigation through pumpsets.
- Important Varieties: Aipan, Malbhog (most precious varieties, onlu cultivated in this region), kanthali, Champa, kothia, chini champa.
- Promotin of Tissue culture Banana varieties on project basis.
- Selected Districts: Vaishali and Khagaria.
- Major interventions: Area Expansion with Tissue culture varieties, replacement of old plant, Formation of farmers group, promotion of fertigation technology, creation of infrastructure for low temperature storage and pre-storage scientific treatment for enhancing shelf-life.

C. Litchi

- About 51 percent of the total Litchi of the country produced in the state with average productivity (7.50 MT/ha) which higher than national average (6.00 MT/ha).
- Areas lying on the riverbed of Budhi Gandhak River are best suited for litchi cultivation.
- Shahi variety, popular in the international market is typical to this area.
- From the angle of commercial trade including export, high percentage of large size fruits in a bunch is a desirable attribute. A bunch of Shahi contains 70% large fruits which are suitable either for export (30%) or interstate trade (40%).
- The growing season in Asia is April to July. Indian litchi is the earliest to arrive in the market closely followed by Thailand, with a lag of about 2 weeks.
- Important Varieties: Shahi,China,Rose scented, Early Bedana, Late Bedana
- Muzaffarpur district has been selected for Promotion of litchi on project basis ATMA system apart form NHM programme.
- Major interventions: Area expansion, promotion of organic farming, promotion of micro-irrigation, grading and packaging of litchi with international standard, cool chain.

D. Guava

- Bihar is major Guava producing state of the country, with about 29,000 Ha area under cultivation and annual production of about 229 thousand MT.
- The main guava belt is Agro-climate zone IIIB (Southern West) of the state and about 36 per cent of the total Guava area is in Patna Division.
- Important Varieties:Allahabad safeda, Lucknow-49, Akra Mridula, chittidar.
- Selected Districts: Bhojpur and Buxar (Areas adjourning to both districts are selected so that market facility, post harvest infrastructure and processing will be easier)
- Major interventions: Area expansion with quality planting material with high density cultivation system, promotion of fertigation. Rejuvenation of old orchard, modern marketing infrastructure development.

E. Pineapple

- Pineapple is exclusively grown in Purnea Divison of the state. About 5000 Ha. area with production of 1.19Lakh tons of pineapple.
- Important Varieties: Giant Kew, Queen, Kew, Jaldhup desi.
- Selected District: Kisanganj (Soli and Agro-climate condition i.e., low temperature and comparatively high rainfall as well as proximity to West Bengal encourages production and marketing of pineapple)
- Major Interventions: Area expansion with quality planting material, scientific pre harvest treatment of fruit for ensuring good quality, development of infrastructure for marketing and processing.

F. Papaya

- Papaya is cultivated in about 1500 Ha area with annual production of 34,000 Tons.
- Medicinal value and low cost and high return encourages commercial production of papaya.
- Commercial production of papaya in districts like Samastipur, Vaishali, Begusarai.
- Varieties commonly grown: Ranchi, Pusa Giant.

- Selected District: Patna and Gopalganj (Traditional areas where farmers left papaya cultivation due to various reason are selected with in district.)
- Varieties identified for commercial production: Pusa Delicious, Pusa Majesty, Pusa dwarf.
- Major interventions: Supply of quality planting material, series of technical tranining on Insect and pest control, creation of pre and post harvest management facilities.

G. Aonla

- Popularly known as the Indian gooseberry, is highly nutritive and one of the richest surce of ascorbic acid.
- This fruit is extensively used in the preparation of Ayurvedic and Unani medicins. Owing to its nutritive and miraculous medicinal properties, this fruit as acquired wide popularity, Aonla preserve has th beneficial effect of purifying blood.
- Prominent Varieties: Banarasi, Chakia, Hathijhool.
- Selected District: Aurangabad and Gaya.
- Major Interventions: Area expansion, training to farmers group on preservation, creation of processing infrastructure.

H. Organic Betel Vine

- Deep green hert shaped leaves of betel vine are popularly known as paan, cultivated in about 3500 Ha, area in the state.
- A well prepared betel quid is still regarded as an excellent mouth fresher and mild vitalizer, routinely served on the social, cultural and religious occasions like marriage, puja (religious festivals), Sraddha ceremony (religious function performed after cremation) etc. It is also used as a special item offered to the guests in order to show respect.
- Extraction of essential oil form betel leaves which may be used as an industrial raw material for manufacturing medicines, perfumes, mouth freshners, tonics, food additives etc. The leaves are nutritive and contain anticarcinogens showing promise for manufacturing of a blood cancer dug.
- Major districts: Madhubani, Nawada, Nalanda and Gaya.
- Prominent Varieties: Maghi, Bangla, Mitha Patta, Banarsi
- Selected District: Madhubani and Nawada
- Major interventions:Promotion of organic cultivation of betel vine, emphasis on IPM and INM, supply chain, establishment of essential oil extraction unit.

I. Jack Fruit

- Jackfruit is the largest tree-borne fruit.
- In Banka district commercial production of Jack fruit is done along with mango. Marketing of jackfruit to kolkata and Patna Markets.
- Promotion of jackfruit cultivation particularly on fallow land.
- Creation of marketing infrastructure and extraction of latex for commercial production.

J. Bael

- Bael is indigenous fruit crop having religious importance.
- Fruit is used as a ayurvedic remedy for such ailemts as diarrhea, dysentery, intestinal parasites, dryness of the eyes, and the common cold. It is vey power ful antidote for chornic constipation.
- Jamui district is selected for poromotion of commercial cultivation of Bael.
- Major interventions: Supply of quiality planting material, creation of supply chain and value addition.

Vegetables

A. Organic Vegetable Production

- Bihar is third largest vegetable producing state in the country. State holds second position in terms of area of major vegetables like Okra, Cauliflower, Cabbage, Brinjal and third in potato and tomato.
- Agro Climate Zone IIIB particularly Patna division is the major vegetable area of the state.
- Promotion organic vegetable production in Nalanda and Kaimur district.
- The basket of organic vegetable includes Okra, Cauliflower, Cabbage and Brinjal.
- Major Interventions: Promotion of vermin-composting, supply of bio culture source of nutrients (PSM, VAM and rhizbium), promotion of micro-irrigation, organic certification of produce, grading and packaging facility.

B. Tomato

- Tomato is grown in about 46400 Ha with annual production of 1.03 Million MT.
- About 30 per cent area under tomato cultivation is in Patna division.
- Selected Districts: Rohtas and Lakhisarai.
- Major Interventions: Demonstration of hybrid tomato varieties, supply of quality seed, infrastructure facility for control of fruit ripening, cool chain, processing unit.

Spices

A. Turmeric

- Turmeric is the most important spices crop in the state. About 40 per cent of the total spices area is under this crop.
- The area under turmeric is about 5000 Ha. with annual production is about 24000 MT.
- Area under turmeric cultivation particularly in Samastipur district has increased more than four folds during last five years.
- Selected Districts: Samastipur and West Champaran.
- Major Interventions: Improving productivity with supply of quality seeds/planting materials of improved high yielding varieties, grading facility for improving the quality of the produce to international standard, value addition through processing.

B.Garlic

- Second most important spices crop with area about 4000 Ha with annual production of 25000 MT.
- The productivity of Garlic is highest among the spices crop in the state.
- Selected District: East Champaran.
- Prominent Varieties: Yamuna Safed, G-21, Lahasun Badsah.
- Major Interventions: Group formation, supply of quality seed material, grading processing particularly garlic paste making unit.

C. Chilly

- Chilly was one of the most important cash crops of the state but due to different diseases and post infection the area under this crop decreases over the years.
- Begusarai district is main chilly growing area of the state.
- Major Interventions: Soil testing of the chilly growing area, supply of new variety recommended disease and pest resistant seed to farmers effective cleaning, grinding, chilly powder marking.

ANNUAL ACTION PLAN of BIHAR FOR THE YEAR 2010-11

S.N.	Programme	Physical	Financial (Rs. in Lakh)		Total
			GOI Share (85%)	State Share(15%)	
1	Production of Planting Materials Model Nursery/Small Nursery	11	37.19	6.56	43.75
2	Vegetable Seed production & Seed infrastructure	651	174.25	30.75	205.00
3	Establishment of New Gardens	17329	1562.86	275.80	1838.66
4	Mushroom Cultivation	8	114.75	20.25	135.00
5	Development of Flowers	230	23.46	4.14	27.60
6	Spices & Aromatic Plants	3300	350.63	61.88	412.50
7	Creation of water resources (a) Water harvesting for indivisuals (b) Community Tank	 46 1	 46.92 12.75	 8.28 2.25	 55.20 15.00
8	Protected Cultivation	100	112.94	19.94	132.88
9	Promotion of INM/IPM	2000	17.00	3.00	20.00
10	Disease forecasting &	874.80	13.20	88.00	11

	plant health Clinic & Leaf Tissue Analysis Lab				
11	Organic Farming adoption, Certification & Vermi Compost	4000	357.00	63.00	420.00
12	Pollination Support through bee keeping	900	10.71	1.89	12.60
13	Horticulture Mechanisation	75	95.63	16.87	112.50
14	HRD	2552	73.84	13.03	86.88
15	Post Harvest Management (a) Cold Storage (b) Refrigerated Van	 5 1	 510.00 8.16	 90.00 1.44	 600.00 9.60
16	Est. of Marketing infrastructure for Horticultural Produce in Govt./Pvt. Cooperative Sector	1 0.00	0.00		
17	Mission Management	15	250.75	44.25	295.00
	Total	31233	3833.64	676.52	4510.16