

# HARYANA OPERATIONAL PILOT PROJECT

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## HARYANA OPERATIONAL PILOT PROJECT ( HOPP )

### **Background :**

The twin problems of waterlogging and soil salinity are threatening the sustainability of agricultural production in large parts of Haryana State. This is because of the fact that alarming rise in the water table is causing a threat to the highly productive agricultural land of the State. According to a rough estimate, an area of about 3.50 lakh hect. is either waterlogged or salt affected. Out of this, about 50,000 hect. is under critical condition.

To tackle problem of salinity and waterlogging, a pilot project namely "Haryana Operational Pilot Project" (HOPP) was started in the State in October, 1994 with the support of Govt. of Netherlands.



The Department of Agriculture was designated as the Nodal Department for the HOPP with the soil conservation office as implementing agency.

### **Aims & Objectives of HOPP**

#### **The specific HOPP objectives are:**

The transfer of technology (equipment, knowledge and skills) relating to the reclamation of waterlogged and saline land in Haryana.

The construction and operation of two horizontal subsurface drainage schemes (Gohana and Kalayat), each of about 1,000 hect.

#### **The creation of the nucleus of an organization in Haryana capable of:**

- implementing subsurface drainage systems on about 2500 hec. Per year and maintaining the resulting drainage network.
- attracting sufficient funds for the purchase of additional equipment, the actual construction of drainage systems and for hiring the required staff.
- The participation of farmers in the planning, construction, operation and maintenance of the subsurface drainage systems.
- The environmentally sound disposal of the saline drainage effluent of the pilot areas.

### **Activities**

The major activity under project is laying of horizontal subsurface drainage system in waterlogged/saline area with the help of drainage trencher. In the system, perforated corrugated PVC pipes are laid horizontally at a depth of 1.7m-3.00 meters of the affected land for leaching of salty water from the plant root zone.

Apart from this, the participation of beneficiaries in the planning, operation and maintenance of the system is also ensured by forming farmer's Drainage Societies so as to create a sense of ownership amongst them.

### **Physical & financial achievements**

1. Average cost of laying S.S.D. system=Rs.35,000 to 40,000 per hect.(approx.)

2. Total area covered under the project

Gohana: 1253 hect.

Kalayt: 746 hect.

Total : 1999 hect.

3. Villages covered Gohana: Katwal, Bali, Moi & Rewara

Kalayt: Kalayat, Kheri Lamba, Koli Khan.

4. Financial achievements

A total amount of Rs.12.70 crore has been spent upto 2002-2003. Year wise details of expenditure is as under :-

(Rs. in lakh)

Year	Financial Assistance	Govt. of Haryana Share	Total
1994-95	12.26	0.09	12.35
1995-96	14.26	9.08	23.34
1996-97	161.16	21.27	182.43
1997-98	160.75	31.45	192.20
1998-99	136.03	64.19	200.22
1999-2000	51.87	68.49	120.36
2000-2001	69.55	61.00	130.55
2001-2002	81.99	76.69	158.68
2002-2003	187.50	62.50	250.00
Total	875.37	394.76	1270.13

In addition to the above an another amount about Rs.12.5 crore has been spent directly by ARCADIS EURO consult of the project for trainings (internal & external) and import of drainage trencher and allied equipment which is presently being used in the Sub Surface Drainage works in the State.

Based upon the success and expertise developed by the department from the above HOPP project, Ministry of Rural Development, Govt of India have already sanctioned four Pilot Projects to be executed in the

state at a total cost of Rs 19.06 crores. Under these projects, an area of 4600 ha which has been severely affected by water logging/salinity would be developed through Sub Surface Drainage System in the districts of Jhajjar, Bhiwani, Sirsa and Sonapat. The cost sharing would be 60:30:10 amongst Govt of India, State Govt. and beneficiaries for "work component" only. The work in Kalayat (II) has been completed wherein an area of 407 ha has been reclaimed through S.S.D. technique.



In the Central and South-Western parts of Haryana, underground water is mostly not fit for irrigation. Therefore, to meet the irrigation requirements, canal irrigation is being used. As a result of less withdrawal of the ground water and more recharge from surface irrigation, the water table in the area over a period of time has come up on the surface, along with salts. Water logging leads to salinity problems. This has adversely affected the crop production. To maintain sustainable production, reclamation of saline and waterlogged soils is needed. According to rough estimate, about 4.00 lakh hectares area in the State is affected with this problem, out of which about 40,000 hectare is under critical condition i.e. water table within 0-1.5 meter.

The saline and waterlogged area occurred along with the canals due to seepage and mainly falls under the districts of Rohtak, Jhajjar, Sonapat, Bhiwani, Hisar, Jind, Sirsa, Fatehabad & Mewat. The reclamation of such soil may be carried out by drainage i.e. surface drainage, bio-drainage, vertical drainage & horizontal drainage (Sub Surface Drainage). The Sub Surface Drainage work undertaken by the Agri. Department.

#### A. INDO-DUTCH PROJECT

A project for the reclamation of water logged and saline lands in Haryana was started with the technical & financial assistance of Govt. of Netherland in October, 1994 and it was named as Haryana Operational Pilot Project (HOPP). Under this project, an area of 2406 hect. was reclaimed in Gohana (Sonapat) & Kalayat (Kaithal). In Sub Surface Drainage System, perforated & corrugated PVC pipes are laid down horizontally with the trencher machine having automatic laser leveler at a depth 1.5 to 2.00 meter of small dia (Lateral) pipe and at 2.00 to 3.00 meter depth of big size dia (Collector) pipe. The lateral pipe are wrapped with filter material and collector wrapped with nylon socks and these pipes are joined to a sump. The dissolved salts of surface and root zone are leached down in these perforated pipes and collected in a sump from where this salty water is lifted and drained out in a drain/canal. Technically, this system has proved very good for reclamation of saline and water logged soils.

#### B. UNDER MINISTRY OF RURAL DEVELOPMENT (MORD) (GOI+STATE) SCHEME.

After the success of the Indo-Dutch Project in Gohana & Kalayat area, Govt. of India, Ministry of Rural Development were sanctioned four projects with a cost of Rs.19.06 crore for covering an area of 4600 hectare in Sonapat, Jhajjar Bhiwani & Sirsa districts. Deptt. has reclaimed 3325 hectare land. Three Trenching machines are working on three different sites at a time. The work in Bhiwani & Sirsa sites was entrusted to HLRDC. The share of Govt. of India & State Govt. was in the ratio of 60:30 while 10% contribution from the farmers was being made. The cost of reclamation with the laying out of SSD System comes around Rs. 55000 per hectare (approx).

#### C. RKVY PROJECT

##### 1) Fatehabad project

In district Fatehabad, a project of 600 hectares and a sum of Rs. 285.00 lakh for the reclamation of Saline & water logged area was approved under RKVY scheme during the year 2008-09. The construction/pipe laying work in 277 hect. has been completed in village Banmandori the rest area of the village Gorakhpur & Kumarian was left due to area fall under proposed Nuclear Plant. This work was also entrusted to HLRDC and now both Trenching Machines have been taken back from HLRDC.

##### 2) Jhajjar-II Project

A project for covering 1000 hectare and a sum of Rs. 475.00 lakh for reclamation of Saline & Water logged area in village Wazirpur, Baghpur and Beri of district Jhajjar Phase-II was approved under RKVY scheme during the year 2009-10. The construction/pipe laying work in 1034 hect. area in village Wazirpur, Bagpur & Beri-Khas has been completed and the remaining civil work of project is in progress.

##### 3-Palwal Project

In district Palwal a project covering 700 hectare and a sum of Rs. 435.00 lakh was approved under RKVY scheme during the year 2010-11. The construction/laying of pipe work in 351 hect. area in Village Kanoli, Madkola and Kheri Jeeta have been completed and the remaining civil work is in progress & rest area is left due to farmers are not interested.

##### 4-Rohtak Project

A project covering 1000 hect. and a sum of Rs. 585.00 lakh has been approved in May 2011-12 by SLSC under RKVY for reclamation of Saline & Water logged area in Village Mokhra. Construction and laying of pipes in 384 hect. area is completed and the remaining SSD work is in progress.

##### 5-Jind Project

A project covering 600 hect. and a sum of Rs. 351.00 lakh has been approved in May 2011-12 by SLSC under RKVY scheme for reclamation of Saline & Water logged area in village Siwanamal & Gangana. Construction and laying of pipes in 285 hect. area is completed and the remaining SSD work is in progress.

##### 6- Sonapat-II SSD Project

A project covering 1000 hect. and a sum of Rs. 615.00 lakh has been approved in May 2012-13 by SLSC under RKVY scheme for reclamation of Saline & Water logged area in village Gharwal (Teh.Gohana) & Rs.180.00 lakh have approved for the current year. The preliminary work and planning for SSD work is in progress

The execution of SSD works is peculiar in nature and could be carried out in fallow fields i.e. during the months of April to June and for a short period in the months of October-November. The availability of fresh water and a surface drain are essential for laying out of this system.

#### BUDGET PROVISION FOR THE YEAR 2012-13

Under RKVY scheme a sum of Rs. 522.00 lakh for laying of Sub Surface Drainage (SSD) work in Rohtak (Rs.180.00 lakh), Jind (Rs.150.00 lakh), Palwal (Rs.12.00 lakh) and Sonapat-II (Rs.180.00 lakh) Project have been approved for the year 2012-13. Now the SSD work is being carried out by three Trenching Machines at a time at three different project sites by the department independently. The strengthening of SSD project is required for covering the more area.

The detailed progress of SSD work under Indo Dutch, MORD and RKVY project is attached.

Cumulative Progress of SSD Projects for Reclamation of Saline & Water Logged Soils in Haryana  
July, 2012)

by Deptt. of Agriculture)

(upto

#### A- SSD Achievements under Indo-Dutch (HOPP) Project

Sr. No.	Project	Villages	Nos. of Drainage Blocks	Area reclaimed	Amount released		Nos. of Beneficiaries	Remarks
					GOI	State		
1	Gohana (Sonapat)	Moi, Bali, Katwal & Rewara	23	1253	Aided by Netherland		872	
2	Kalayath (Kaithal)	Kherilamba, Kalayat, Kolekhan & Kurar	21	1153	Aided by Netherland		725	407 ha. (Rs. 45.72) under MMM Scheme By HLRDC)
		Total	44	2406			1597	

#### B- SSD Achievements under M.O.R.D. Scheme (GOI +State Govt. Sharing basis)

Sr. No.	Project	Villages	Drainage Blocks	Area reclaimed	Amount released		Nos. of Beneficiaries	Remarks
					GOI	State		
1	Jhajjar	Berikhas, Beridopana, Gochhi, Dhandlan & Bakra	14	805	273.25	127.50	873	
2.	Bhiwani	Achina, Loharwala, Jhinjar & Rawaldhi	16	904	295.06	127.50	963	By HLRDC
3.	Sirsa	Surtia, darba-Kalan & Nathusrichaupta	12	479	126.39	98.96	180	By HLRDC
4.	Sonapat	Dhanana, Rindana, Jagsi	23	1137	126.39	98.96	836	
		Total	65	3325	821.09	452.92	2852	

#### C- SSD Achievements under RKVY Scheme

Sr. No.	Project	Villages	Drainage Blocks	Area reclaimed	Amount released		Nos. of Beneficiaries	Remarks	
					GOI	Stat			
1	Fatehabad	Banmandori	10	277	144	-	130	By HLRDC	
2	Jhajjar-II	Wazirpur, Baghpur & Beri	23	1034	340	-	615	Civil work is in progress	
3	Palwal	Kanoli, Madkola, Kherijeeta	10	351	265	-	172	Work in progress	
4.	Rohtak	Mokhra Khas	7	384	155	-	130	Work is in progress.	
5.	Jind	Siwanamal	7	285	160	-	120	Work is in progress.	
		Total:-	57	2331	1064	-	1167		
		G.Total: A+B+C	166	2406+3325+2331=8062			5366		
Year-wise progress:		2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
In hect		506	513	189	753	639	620	842	1060