Series-E

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भारत सरकार

Government of India

जल संसाधन मंत्रालय

Ministry of Water Resources

केंद्रीय भूमि जल बोर्ड

CENTRAL GROUND WATER BOARD

GROUND WATER INFORMATION BOOKLET
SIRMAUR DISTRICT, HIMACHAL PRADESH

उतरी हिमालय क्षेत्र

NORTHERN HIMALAYAN REGION

धर्मशाला

DHARAMSALA

सितम्बर, 2013

September, 2013

2013

जल संरक्षण वर्ष 2013

स्वच्छ सुरक्षित जल – सुन्दर खुशहाल कल

CONSERVE WATER - SAVE LIFE

जल संरक्षण वर्ष 2013
स्वच्छ सुरक्षित जल – सुन्दर खुशहाल कल
CONSERVE WATER - SAVE LIFE

Ground Water Information Booklet
Sirmaur District, Himachal Pradesh

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CONSERVE WATER - SAVE LIFE

SIRMAUR DISTRICT AT A GLANCE

1. GENERAL PERTICULARS

A.	Location		:	North latitude $30^0$22’00”- $31^0$01’ & East longitude 77°01’00” - $77^0$50’00”
B	Area		:	2,825 sq. km
C.	District & Tehsil Headquarter		:	Nahan
D.	Number of Tehsils		:	6
E.	Number of Sub-Tehsils			4
F.	Number of Blocks		:	5
G.	Number of Towns		:	3
H.	Number of Villages		:	968
I.	Population	Total	:	5,29,855 persons (2011)
		i. Rural	:	4,72,690 persons
		ii Urban	:	57,165 persons
		iii Schedule Caste	:	1,60,745 persons
		iv Scheduled tribes	:	11,262 persons
J.	Work Force	i. Cultivators	:	1,15,992 persons
		ii. Agricultural Laborers	:	5,953 persons
K.	Literacy		:	68.44 %
M.	Livestock Population		:	4,22813

2. LANDUSE

i. Net Cultivated Area	:	41,447 Hectare
ii Area Sown	:	35,121 Hectares
ii. Net Irrigated Area	:	14,034 Hectares

3. CLIMATOLOGY

A.	Average Annual Rainfall	:	1405 mm
B.	Maximum Temperature	:	30^0C
C.	Minimum Temperature	:	-2^0C
D.	Relative Humidity	:	80 %

4. GROUND WATER HYDROLOGY

A.	Depth to Water Level			
	i.	Valley fill Area	:	5 to 10 m bgl
	ii.	Fissured formation	:	20 to 30 m bgl
B.	Maximum rise in water level (seasonal)		:	6.20 m
C.	Minimum rise in water level (seasonal)		:	0.28 m bgl
D.	Tubewell yield within 50 to 300 m depth		:	15 lps to about 25 lps
E.	Spring yield		:	Less than 1 lps to 25 lps

5. GROUND WATER RESOURCES (PAONTA VALLEY) March 2011

A.	Assessment Unit (Paonta Valley)	:	15,627.00 hect.
B.	Existing gross ground water draft for all uses	:	2174.46 hect.m
C.	Total Annual Ground water recharge	:	8108.39 hect.m
D.	Natural Discharge during Non-Monsoon season.	:	810.84 hect.m
E.	Allocation for domestic, and industrial requirement supply up to next 25 years	:	858.44 hect.m
F.	Net ground water availability for future irrigation development	:	5980.70 hect.m
G.	Stage of ground water development	:	26.66 %
H.	Categorization of the Assessment Unit	:	“SAFE”

6. GROUND WATER RESOURCES (KALA AMB VALLEY) March 2011

A.	Assessment Unit (Kala Amb Valley)	:	250.00 hect.
B.	Existing gross ground water draft for all uses	:	545.32 hect.m
C.	Total Annual Ground water recharge	:	101.66 hect.m
D.	Natural Discharge during Non-Monsoon season.	:	10.16 hect.m
E.	Allocation for domestic, and industrial requirement supply up to next 25 years	:	494.51 hect.m
F.	Net ground water availability for future irrigation development	:	0.00 hect.m
G.	Stage of ground water development	:	564.63 %
H.	Categorization of the Assessment Unit	:	“OVER EXPLOTED”

7. Ground Water Quality : Fresh

DISTRICT GROUND WATER BOOKLET
SIRMAUR DISTRICT, HIMACHAL PRADESH

1.0 INTRODUCTION

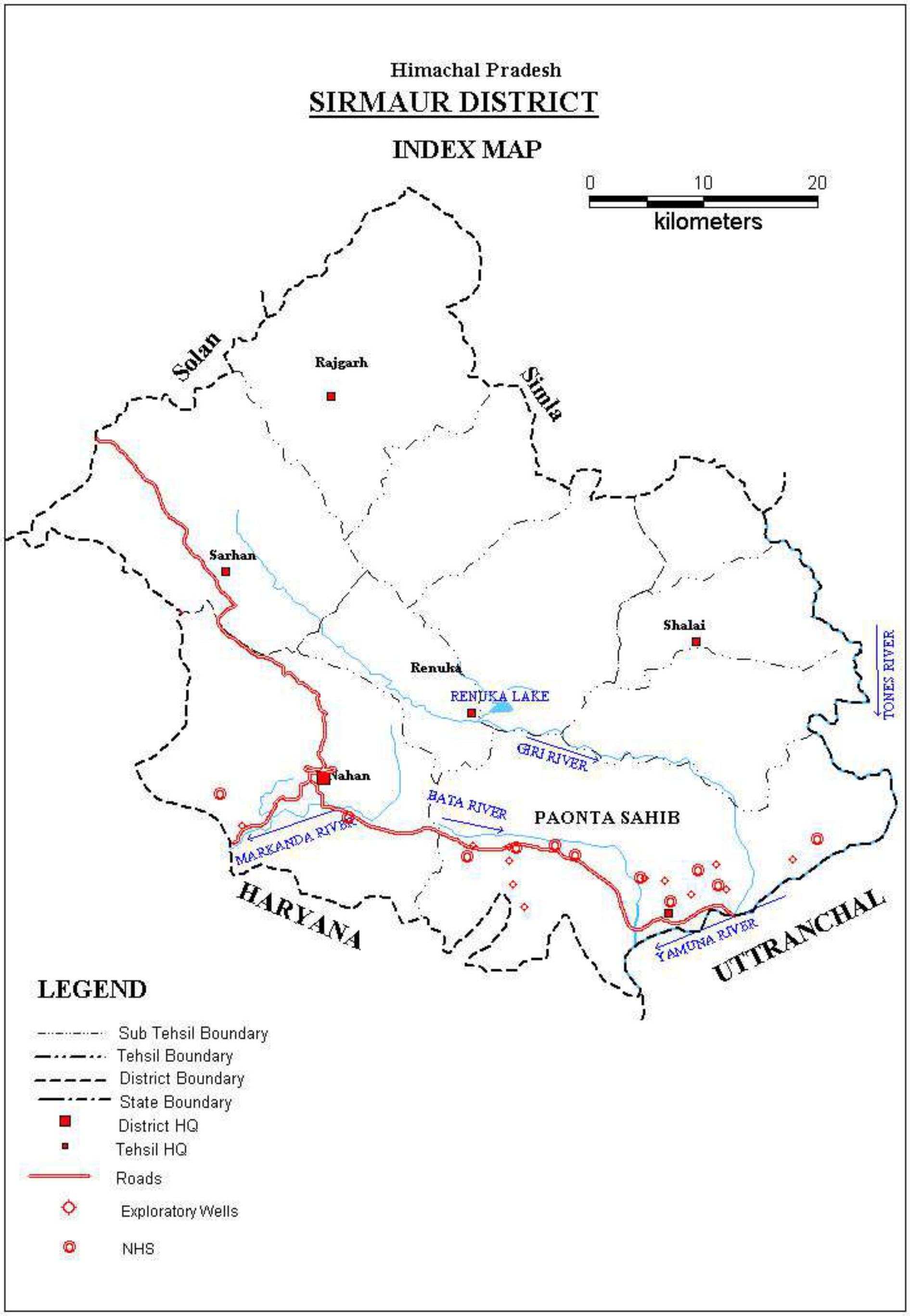
Sirmaur is the southern most districts of Himachal Pradesh having 2825 sq km geographical area. The district has hilly and mountainous topography with intermontane valleys, prominent being the Poanta valley. The district, has its headquarter at Nahan and lies between North latitude 31°01’00” to 30°22’00” and East longitude 77°01’00” to 77°50’00” and is covered by Survey of India degree-sheets 53F and53E. The district is bounded by Shimla district towards north & Sirmaur district towards west. District has inter-state boundary in the south with State of Haryana and with Uttranchal to the east. The district is well connected by road network with national high way number 72 passes through the district. The nearest airports are at Shimla (Jubbal Hatti) and Chandigarh.

Administratively, Sirmaur district has been divided in to three-sub division viz., Nahan, Poanta Sahib & Rajgarh and have ten tehsils & sub-tehsils [Nahan, Poanta Sahib, Puchad, Rajgarh, Shalai, Renuka, Nohra, Rohnat, Dadahu, Kamrau. There are 228 panchayats, 968 villages & 3 towns in the district.

As per 2011 census, population of the district is 5,29,855 persons with 188 person per sq km density of population. The rural & urban population is 4,72,690 (89%) & 57,165 (11%) respectively. The schedule caste and schedule tribes population in the district is 30.34 (%) & 0.02 % respectively. Male female sex ratio is 1000: 981.

The local inhabitants mainly depend on agriculture for their subsistence and adopt several traditional practices conducive for farming in sloping terrains. Large and small scale industrial units however has come up at Poanta valley.

Central Ground Water Board (CGWB) has carried out hydro-geological studies and ground water exploration in the district. Hydrogeological studies and exploration commenced in sixties, and under exploratory drilling programme 12 exploratory wells ranging in depth from 90 to 163 m have been drilled. Further, CGWB under its national network maintains 10 stations for ground water regime monitoring where water level and ground water quality is monitored on regular basis.



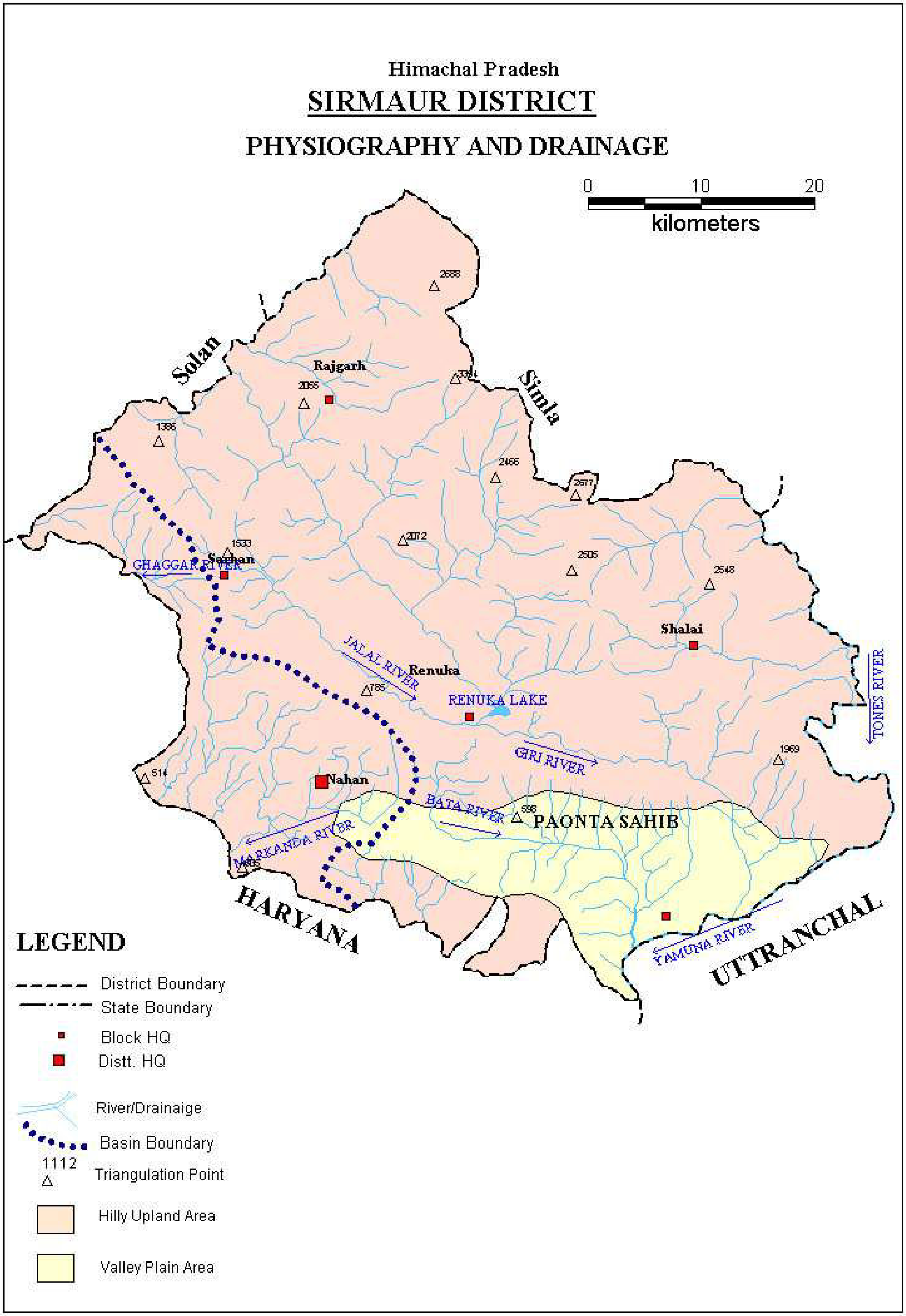
2.0 CLIMATE & RAINFALL

The climate of the district is sub-tropical to temperate depending upon the elevation. Four major seasons that is the winter season extends from Nov to February; summer season from March to June followed by the monsoon period extending from July to September end. Maximum precipitation in the form of rain occurs during July to September. Average annual rainfall in the district is about 1405 mm, out of which 90% occurs during monsoon season. In the non monsoon season precipitation as snowfall also occurs in the higher reaches above 1500 m amsl, the peaks of Choor dhar remains covered by snow. During winter period rainfall also occurs in lower hills and valleys parts. Mean maximum and minimum temperature of 30°C and -0°C respectively.

3.0 GEOMORPHOLOGY & SOILS

Sirmaur district presents an intricate mosaic of high mountain ranges, hills and valleys with altitude ranging from 300 to 3000 m above MSL. There is general increase in elevation from south to north and from east to west. In general trance Giri terrain exhibits highly rugged mountain terrain. The highest peaks in Chaur dhar remain snow bound through out the year. Low denuded hill ranges of Siwalik represent the southwestern part of the district. In the areas underlain by high hill ranges of Himalayas, the valleys are narrow and deep with steep slopes. The terrain is moderately to highly dissected with steep slopes. Paonta valley, trending NW-SE, have an area of about 230 sq km and lies between the main Himalayan ranges on the north and outer Siwallik hill range in the south.

The Yamuna River that forms the eastern district boundary with the State of Uttranchal drains major part of Sirmaur district. Tons, Giri, Bata are its major tributaries. Only a small area in the southeast is drained by river Markanda of the Ghaggar river basin. Giri River practically bisects the district in to two parts, namely trans Giri area and cis-Giri area. Paonta valley is drained by river Bata a tributary of Yamuna.


Himachal Pradesh
SIRMAUR DISTRICT
PHYSIOGRAPHY AND DRAINAGE
0 10 20
kilometers
Solan
Simla
HARYANA
UTTRANCHAL
Rajgarh
Sarahan
Shalai
Renuka
Nahan
PAONTA SAHIB
GHAGGAR RIVER
JALAL RIVER
RENUKA LAKE
GIRI RIVER
BATA RIVER
MARKANDA RIVER
YAMUNA RIVER
TONES RIVER
LEGEND
District Boundary
State Boundary
Block HQ
Distt. HQ
River/Drainaige
Basin Boundary
1112
Triangulation Point
Hilly Upland Area
Valley Plain Area

The soil in the district varies from thin and bare soil of high mountains to rich deep alluvial soil of the valleys. In the hilly area i.e. northern part soils are veneer and brown in colour, these are high base status soil of humid regions. In the southern part, combination of shallow black, brown and alluvial soils are found.

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4.0 GROUND WATER SCENARIO

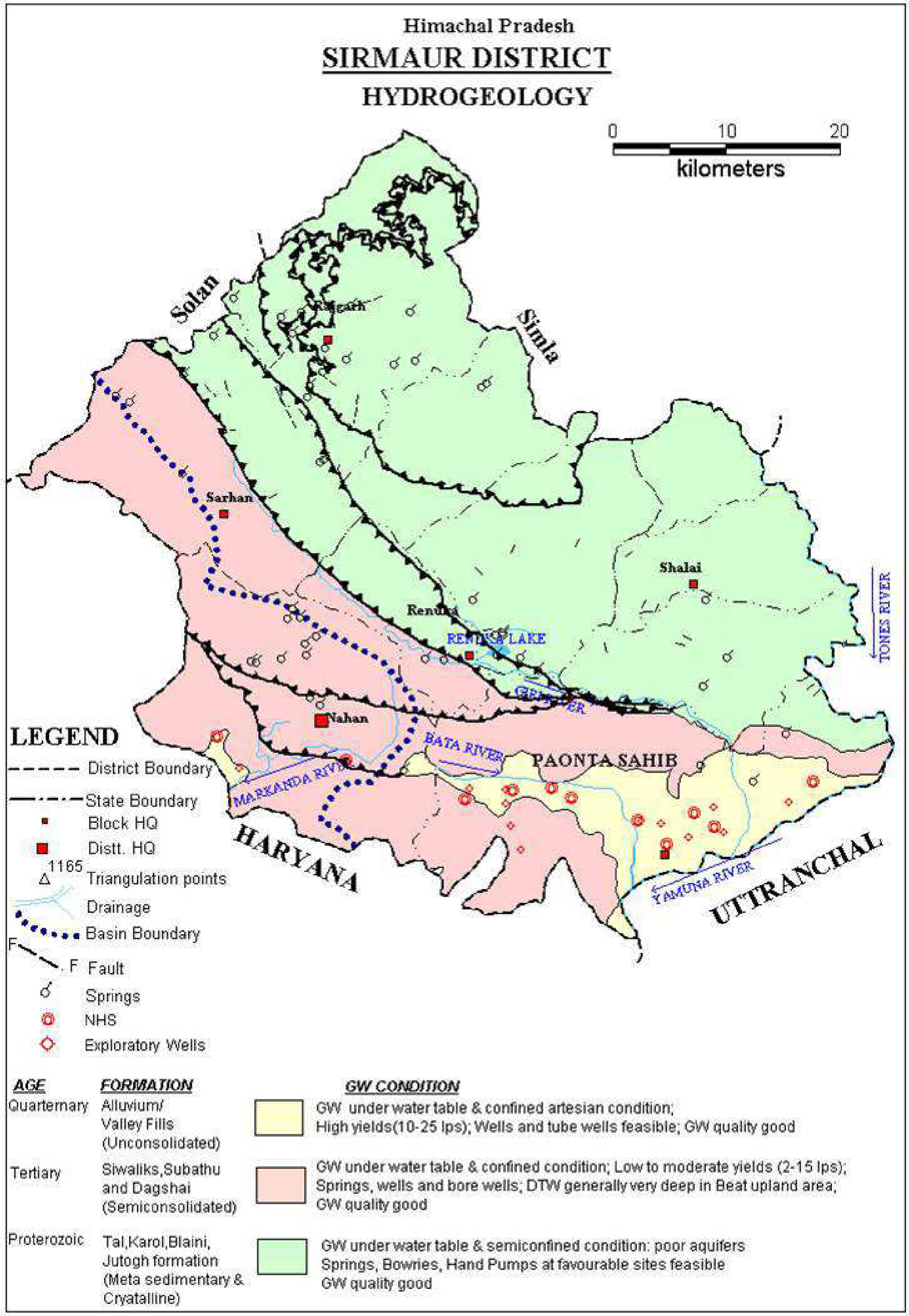
4.1 Hydrogeology

Geologically, the rock formations occupying the district range in age from pre-Cambrian to Quaternary period. The generalized geological succession in the district is given below

Era	*Period*	*Formation*	*Lithology*
Quaternary	Recent to Pleistocene	Alluvium /valley fills/ Older alluvium	Sand with pebble and clay & multiple cyclic sequence of medium to coarse grained sand with pebble of sandstone and lenses of clay
Tertiary	Pliocene – M-Miocene	Siwalik Group	Sandstone, shale, conglomerate, mudstone, clay, gravel & boulder beds beds
	L-Miocene – Oligo-Eocen	Kasauli/Dagshai/ Subathu	Grey, purple sandstone, Shale, nodular clay, Shale, Limestone etc.
Pre-Tertiary Group	Pemo Carboniferous	Karol/ Infra-Karol, Blainis boulder beds	Limestone, shale, red shale Carbonaceous shale, slate, greywacke, dolomitic limestone.
	Devonian	Jaunsar series	Slates schist phyllite,
	Pre-Cambrian	Chail series	Slates called Shimla slates
	Achaean	Jutogh series	Quartzites, schist and limestone.

Paonta valley is a narrow tectonic valley or *dun* and has fluvial and fluvio-glacial sediments

Hydro-geologically, the unconsolidated and semi-consolidated/ consolidated rock formations form aquifers in the district. Intergarnular pore spaces in the sedimentary formations and secondary fissured porosity in hard rocks, topographical set up coupled with precipitation in the form of rain and snow, mainly govern occurrence and movement of ground water. Porous alluvial formation occurring in the valley area forms the


Himachal Pradesh
SIRMAUR DISTRICT
HYDROGEOLOGY
0
10
20
kilometers
Solan
Simla
Rajgarh
Sarhan
Shalai
Renuka
RENUKA LAKE
TONES RIVER
Nahan
BATA RIVER
PAONTA SAHIB
MARKANDA RIVER
HARYANA
YAMUNA RIVER
UTTRANCHAL
LEGEND
District Boundary
State Boundary
Block HQ
Distt. HQ
1165
Triangulation points
Drainage
Basin Boundary
F
F
Fault
Springs
NHS
Exploratory Wells
AGE
FORMATION
GW CONDITION
Quarternary
Alluvium/
Valley Fills
(Unconsolidated)
GW under water table & confined artesian condition;
High yields(10-25 lps); Wells and tube wells feasible; GW quality good
Tertiary
Siwaliks,Subathu
and Dagshai
(Semiconsolidated)
GW under water table & confined condition; Low to moderate yields (2-15 lps);
Springs, wells and bore wells; DTW generally very deep in Beat upland area;
GW quality good
Proterozoic
Tal,Karol,Blaini,
Jutogh formation
(Meta sedimentary &
Cryatalline)
GW under water table & semiconfined condition: poor aquifers
Springs, Bowries, Hand Pumps at favourable sites feasible
GW quality good

most prolific aquifer system where as the sedimentary semi-consolidated formations and hard rocks form aquifer of low yield prospect.

Major parts of the district are hilly & mountainous with highly dissected and undulating terrain. These areas are underlain by semi-consolidated and consolidated hard rocks of Tertiary and pre-Tertiary period. Ground water potential in such areas is very low due to its hydro-geomorphic set up. Springs are the main ground water structures that provide water supply for domestic and irrigation in major rural and urban areas.

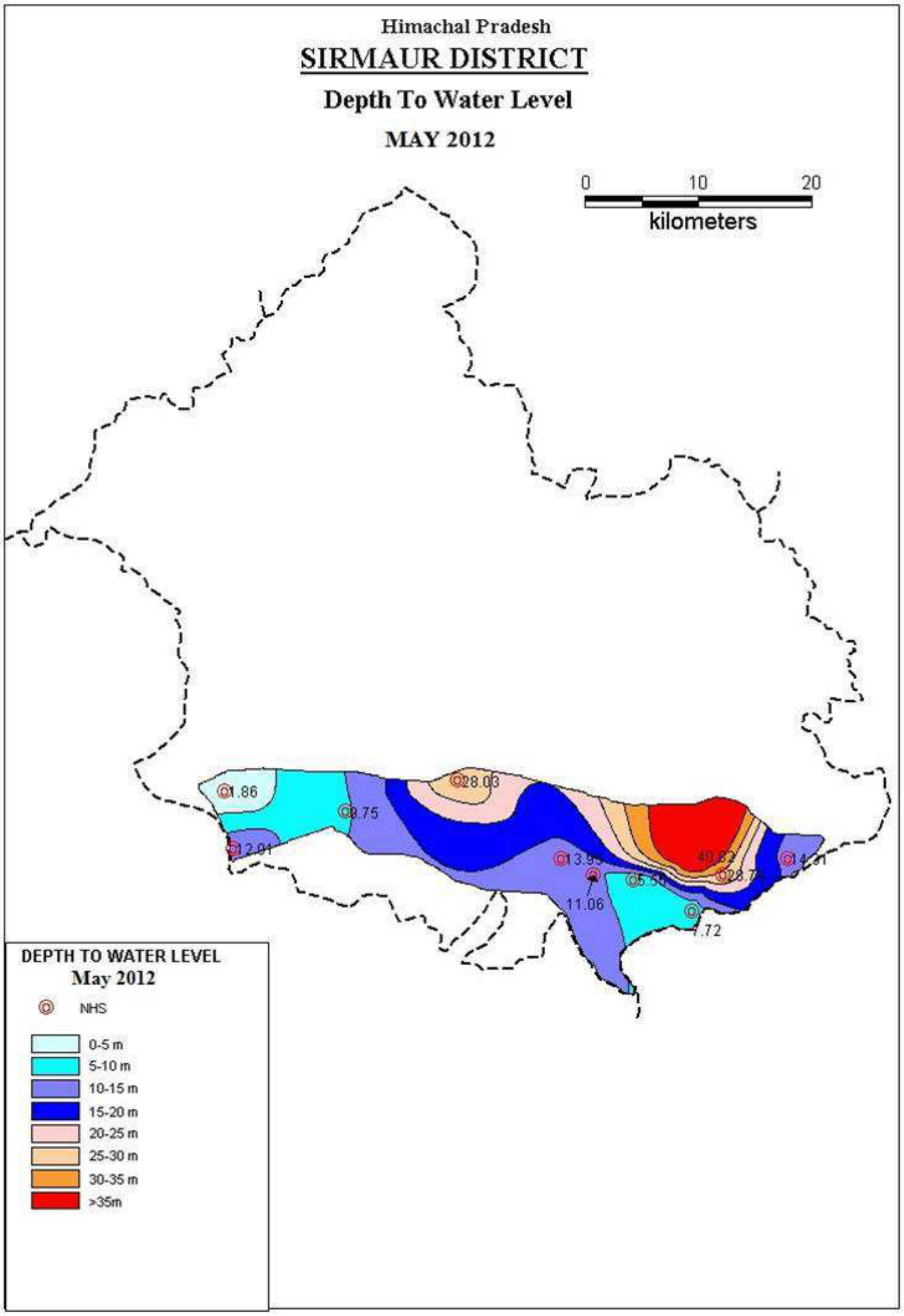
Springs are the major ground water sources of water supply in the district. These springs are mainly gravity, contact or fracture type and springs located along major thrust/faults or structurally weak planes are high yielding. The springs, locally called C*hasma,* have discharges varying from seepages to 15 litres per second. *Bowries*, a type dug well, are another structure constructed in the hill slopes to tap the seepages. Such *Bowries* are common and observed all southern part of the district. In the last more than a decade, state government have drilled shallow bore wells fitted with hand-pumps to provide domestic water. These hand pumps have depth up to average 50-60m and have low discharges up to 1 lps.

In valley area of Poanta, the ground water occurs in porous unconsolidated alluvial formation (valley fills) comprising, sand, silt, gravel, cobbles/pebbles etc. Ground water occurs both under phreatic & confined conditions. Wells and tube wells are the main ground water abstraction structures. Ground water is being developed in the area by medium to deep tube wells, dug wells, dug cum bored wells. Depth to water level shows wide variation from near surface to more then 35 m bgl. Yield of shallow aquifer is moderate with well discharges up to 10 lps.

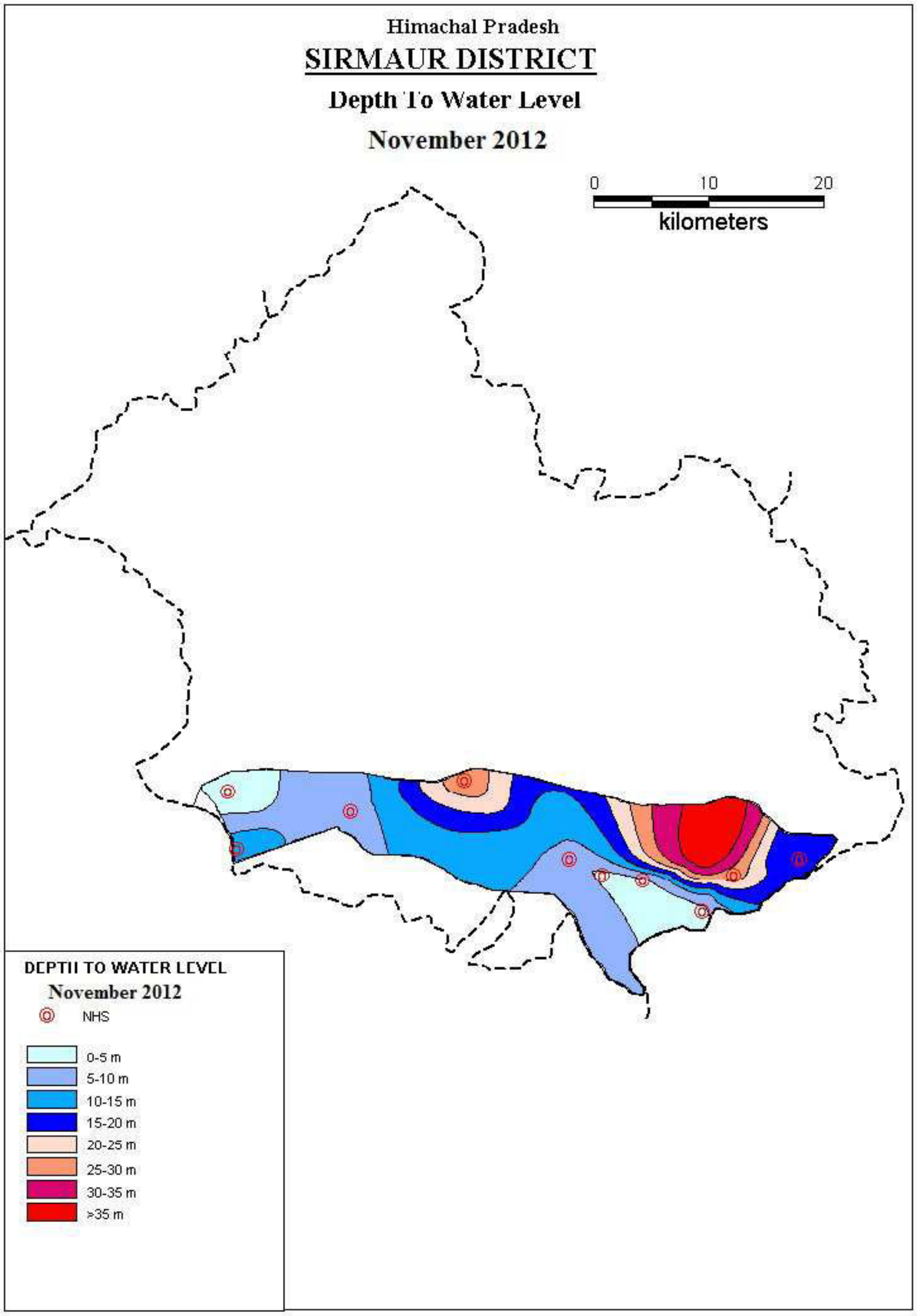
CGWB has drilled/constructed 11 exploratory wells in the valley area in the depth range of 90.00 to 163.00 m bgl. Static water level of the tubewells ranges from 2 m to 43.00 m bgl and discharges ranges from 200 to 3220 lpm.

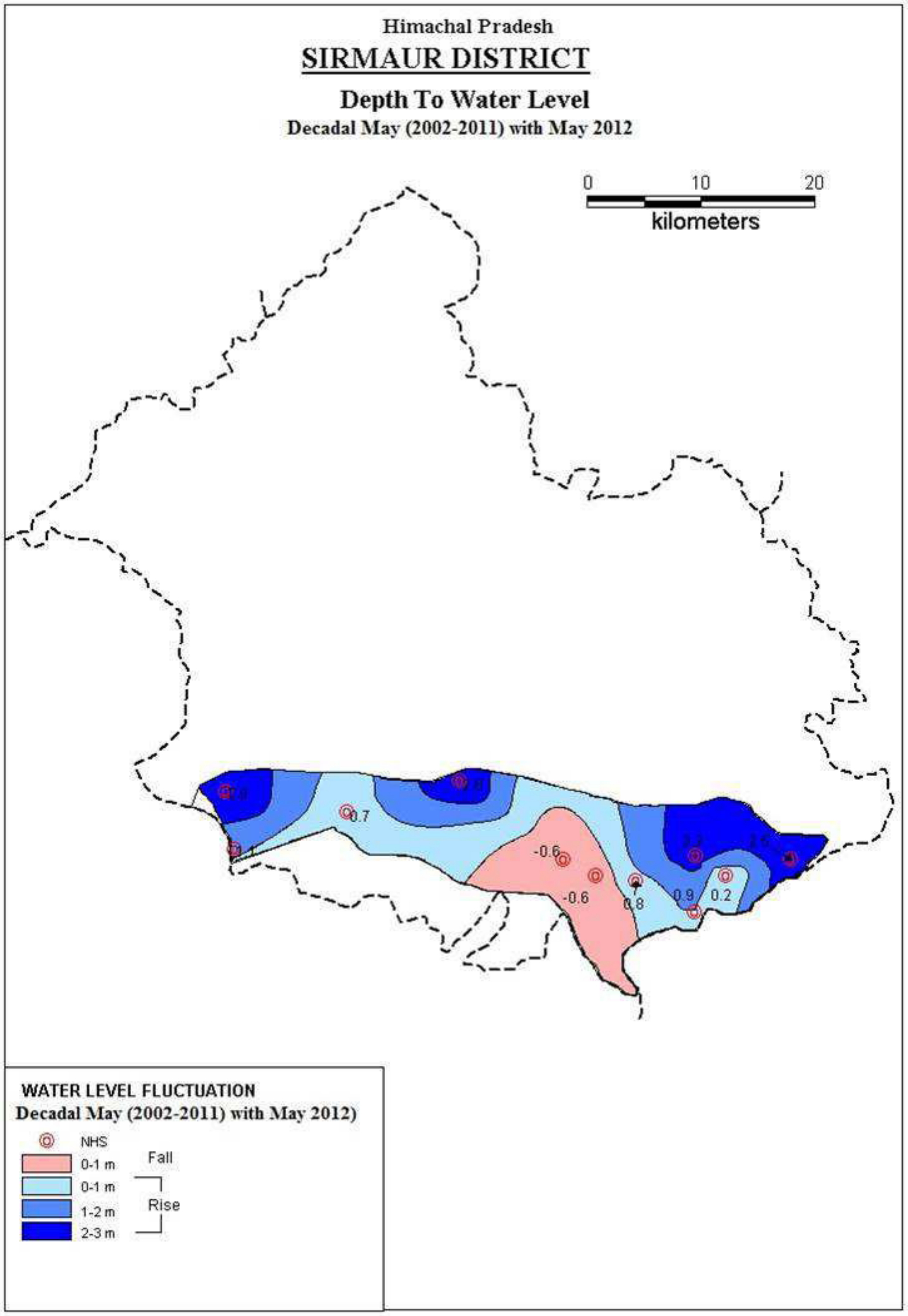
In Poanta valley area, there are 12-hydrograph network stations where depth to water level is monitored four times a year and ground water quality once during pre-monsoon period. Depth to water table shows wide variation. During pre-monsoon period (May 2012) it ranged between 3.76

& 43.98 m bgl, while during the post-monsoon period (November 2012) depth to water level ranged from 2.98 to 37.35 m bgl. Deeper water levels are observed mainly in northwestern part and along the foothills. In major parts of the valley the depth to water level are less than 17.00 m bgl.



Long-term water level fluctuation was analysed for the period of May 2012 with respect to decadal average of 2002 to 2011. In general, fall in water level up to 2 m is observed in most part of the valley. However, in isolated pockets in western and eastern part of Paunta valley rise of water level up to 5 m is also observed.





4.2 Ground Water Resources

Rainfall is the major source recharge to the groundwater body apart from the influent seepage from the rivers, irrigated fields and inflow from upland areas. The discharge from ground water mainly takes place from wells and tube wells; effluent seepages of ground water in the form of springs and base flow in streams.

Ground water resources and irrigation potential for Poanta valley and Kala Amb area of Sirmaur district have been computed utilising GEC-97 methodology for the year 2009 as given below.

GROUND WATER RESOURCES (PAONTA VALLEY) March 2011

A.	Assessment Unit (Paonta Valley)	:	15,627.00 hect.
B.	Existing gross ground water draft for all uses	:	2174.46 hect.m
C.	Total Annual Ground water recharge	:	8108.39 hect.m
D.	Natural Discharge during Non-Monsoon season.	:	810.84 hect.m
E.	Allocation for domestic, and industrial requirement supply up to next 25 years	:	858.44 hect.m
F.	Net ground water availability for future irrigation development	:	5980.70 hect.m
G.	Stage of ground water development	:	26.66 %
H.	Categorization of the Assessment Unit	:	“SAFE”

GROUND WATER RESOURCES (KALA AMB VALLEY) March 2011

A.	Assessment Unit (Kala Amb Valley)	:	250.00 hect.
B.	Existing gross ground water draft for all uses	:	545.32 hect.m
C.	Total Annual Ground water recharge	:	101.66 hect.m
D.	Natural Discharge during Non-Monsoon season.	:	10.16 hect.m
E.	Allocation for domestic, and industrial requirement supply up to next 25 years	:	494.51 hect.m
F.	Net ground water availability for future irrigation development	:	0.00 hect.m
G.	Stage of ground water development	:	564.63 %
H.	Categorization of the Assessment Unit	:	“OVER EXPLOTED”

The stage of ground water development in Poanta valley area is 26.66 % as on 2011 and falls under “*safe category*”.
The stage of ground water development in Kala Amb valley area is 564.63% as on 2011 and falls under “*Over Exploited category*”.

4.3 Ground Water Quality

Chemical quality data of ground water from shallow and deep aquifers in the district indicates that ground water is generally alkaline in nature and suitable both for domestic and irrigation use. All the parameters analyzed are well within the permissible limit of safe drinking water as per Bureau of Indian Standard (BIS). The range of chemical parameters of hydrograph network stations of CGWB in the district are summarized below

Range	pH	EC µS/cm	HCO_3	Cl	NO_3	F	Ca	Mg	Na	K	TH as $CaCO_3$
			mg/l								
Min	7.23	328	277	22	2.1	0.26	36	8.5	18	2.3	59
Max	8.0	876	499	159	88	0.78	104	27	294	8.2	634

Quality of ground water in shallow aquifer is thus good for domestic and irrigation purpose in the district.

Though contamination of ground water sources has not been reported in the district so far, however, the fast developing industrial area particularly in Poanta block, is vulnerable to pollution from industrial effluents. There is thus need to have proper ETPs and waste disposal system with all the industries and also the towns. Proper monitoring is very much required.

4.4 Status of Ground Water Development

Ground water development particularly in valley areas in the district is on moderate scale. In these areas, all the major irrigation, industrial and domestic water supplies depend on ground water viz., open wells & tube wells. In rest of the district area due to poor potentialities in hilly hard rock areas and due to steep sloppy terrain, groundwater oozes in the form of

springs. The development by wells and tube wells is not feasible and thus negligible. However, in these areas, major water supply and sources of water are ground water viz., perennial springs, *bowries* and hand pumps. Springs are tapped at the source so that the water can be supplied under gravity. All major towns and villages are supplied water from ground water sources. Large-scale ground water development is mainly restricted to Poanta valley only where wells and tube wells are feasible. In these areas, ground water is developed by large number of dug wells, shallow & tube well. All the major irrigation, drinking and industrial water supplies depend on these structures in addition to various water supply schemes based on base flow in rivers and streams or *nallas*.

As per MI census, there were about 400 dug wells, 150 shallow tube wells and 12 deep tube wells in the district as on 2000-01 in the Sirmaur district used exclusively for irrigation.

5.0 GROUND WATER MANAGEMENT STRATEGY

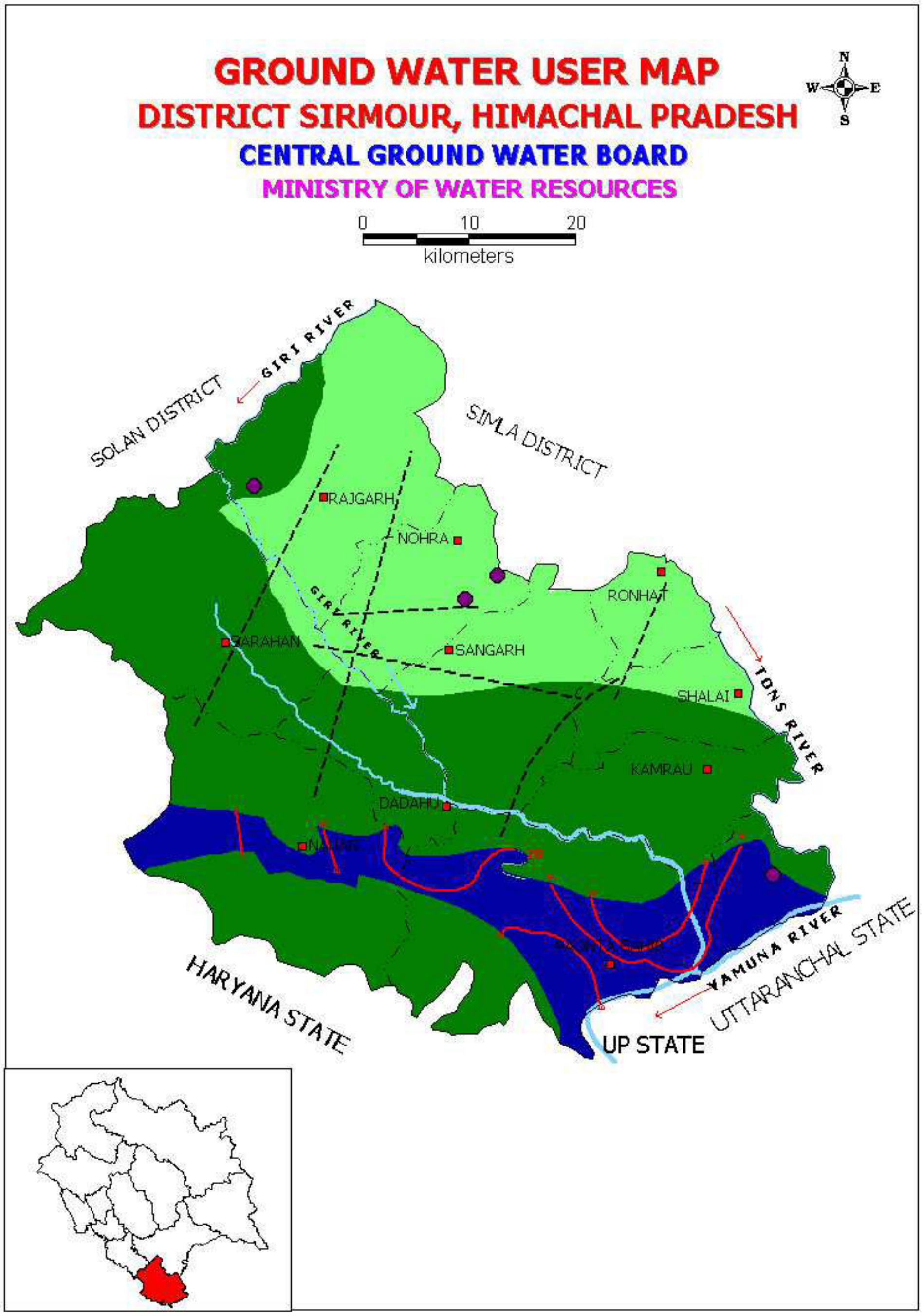
5.1 Ground Water Development

In hilly and mountainous area of the district ground water development through the traditional ground water sources viz. Springs *(chasmas*), *Bowries* and perennial streams are the only possible apart from the shallow bores or hand pumps in favorable locations. Proper development of springs is essential as it is observed that most of the spring does not have collection chamber or tanks from where water can be distributed under gravity. The objective of spring development should be to collect the flowing water underground, to protect it from surface contamination and to store it in sanitary spring box for supply. Similarly, *seepage springs* along hill sides also need to develop for harnessing ground water in such areas.

In the last decade, number of shallow bore wells fitted with hand pumps have been constructed in these areas and serving as the source of water supply for domestic uses in the district. In the hilly areas and shallow bore wells in favorable location are feasible. However, looking to the fragile eco-system drilling activity should be minimum and traditional sources should be harnessed and protected.

In valley areas of the district, Poanta valley, resource estimation shows only 26.66 % the stage of ground water development (as on 2011). Thus this area falls in S*afe category*. Thus the scope for further ground water development by constructing additional wells, shallow and medium depth tube-wells are feasible in these areas. However, in view of mild falling water levels, cautious development approach along with proper development monitoring is required.

There is no scope of further ground water development in Kala Amb valley, as the stage of ground water development is 564.63% which falls in *Over Exploited category*.



LEGEND

	Wells feasible	Rigs suitable	Depth of Well (m)	Discharge (lpm)	Suitable artificial Recharge structures
Soft rock aquifers	Tube well Dug well	Percussion & Percussion cum Rotary Manual	100-120 10-20	1200-2500 300-500	Check dam, Check dam cum ground water dam, Recharge shaft
Hard rock aquifers	Dug well Spring development	Manual	10-20	300-500 30-2000	

Spring	5 Water level contour (m bgl) (Pre monsoon decadal mean, 1993-2002)
Major drainage Reservoir	Fault/lineament Tehsil boundary District boundary State boundary

5.2 Water Conservation & Artificial Recharge

Ground water is the major source for irrigation & domestic water supply in both rural and urban areas. Water level observation data has revealed declining trend in water level in some parts of the district. Though the stage of ground water development in valley is still in *safe category*, however, in many parts the availability of water during summer is limited particularly in hilly areas in drought/ low rain/snow years. There is thus a general need to conserve and augment water resource. Based upon the climatic conditions, topography, hydro-geology of the area, suitable structure for rain water harvesting and artificial recharge to ground water need to be planned and implemented. Roof top rainwater harvesting is one such solution both for urban & rural areas. Rainwater harvesting in rural area and proper scientific intervention for spring development and revival of traditional water storage is required in water scarce hilly upland areas.

6.0 GROUND WATER RELATED ISSUES & PROBLEMS

Most of the ground water issues and problems in the district are localized requiring independent treatment by taking the micro level studies. In hilly and mountainous parts, the most common issues relate to scarcity of water particularly in low precipitation year during non-monsoon period when dwindling levels and spring discharges are seen. Rainwater harvesting and awareness for water conservation, protection & scientific development of traditional sources and water harvesting are measures that need to be adopted.

Presently large development of ground water is observed in industrial belts of Poanta valley wherein fall of water level down to six meters have been observed in parts. Thus, ground water level depletion and also vulnerability to ground water pollution is major issues in this industrial belt.

7.0 AWARENESS & TRAINING ACTIVITY

Mass Awareness Programme (MAP) & Water Management Training Programme (WMTP) by CGWB

Mass Awareness Programmes and Water Management Training Programmes were organized at Thakurdwara & Kala Amb to create awareness and also trained the officers and officials of I&PH Deptt, Forest Deptt, Industries and NGOs about the techniques of rain water harvesting and ground water recharge.

Presentation & Lectures delivered in public forum / Radio/TV/Institution of repute/Grassroots association /NGO/Academic institutions etc

So far presentation and lectures were delivered amongst the gathering during the MAP and WMTP only.

8.0 AREAS NOTIFIED BY CGWA / SGWA

The stage of ground water development in Paonta valley of the district (as on 2011) is 26.66 % only. The Kala Amb valley has been categorized under *"Over Exploited"* due to heavy industrial draft in the area.

9.0 RECOMMENDATIONS

- In alluvial areas of Poanta valley, there is scope for ground water development as stage of ground water development is low. However, ground water development should be cautious and in phased manner and regular monitoring is required. In the Kala Amb valley, the artificial recharge to ground water practices may be adopted to increase the net ground water availability in the area.
- The industrial units particularly dye and pharmaceutical discharges highly toxic effluents due to which such areas are highly prone and vulnerable to surface & ground water pollution; thus close network of water quality monitoring is essential.
- Proper waste/effluent disposal measures are required to be adopted by industrial units and state authorities to check the pollution.
- There is need to protect traditional water harvesting structures like ponds, tanks, *talavs* and to utilized these for rain water harvesting and recharging shallow aquifers.
- In hilly and mountainous terrain, traditional ground water sources viz., springs, *bowries* etc needs to be developed and protected for better health and hygiene with proper scientific intervention.
- Springs needs to be inventoried & studied for optimum utilisation and development of their discharge either by fracturing, horizontal drilling or by constructing galleries etc.
- Roof top rainwater harvesting practices can be adopted in hilly and urban areas, since the district receives fair amount of rainfall. Construction of roof top rain water harvesting structures should be made mandatory in all new construction. Rain water harvesting in rural areas should be promoted. Traditional water storage systems need to be revived.
- People's participation is a must for any type of developmental activities. So proper awareness for utilization and conservation of water resources is required.

SAVE WATER – SAVE LIFE

जल संरक्षण वर्ष 2013

स्वच्छ सुरक्षित जल – सुन्दर खुशहाल कल

CONSERVE WATER - SAVE LIFE

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Regional Director Incharge
and
Dalel Singh
Suptdg Hydrologist

Our Vision
Water security through sound groundwater management

जल संरक्षण वर्ष 2013
स्वच्छ सुरक्षित जल – सुन्दर खुशहाल कल
CONSERVE WATER - SAVE LIFE

For Technical Assistance Relating to Rainwater Harvesting & Artificial Recharge to Ground Water

Contact:

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NORTHERN HIMALAYAN REGION
Dove Cottage, Near Ramnagar, Dharmsala
District Kangra, (H.P.)

Phone: **01892- 224775, 227160**
Telefax: **01892-223535**

e-mail: **rdnhr-cgwb@nic.in**
website: **www.cgwb.gov.in**

SAVE WATER SERVE HUMANITY

जल संरक्षण वर्ष 2013

स्वच्छ सुरक्षित जल – सुन्दर खुशहाल कल

CONSERVE WATER - SAVE LIFE