Review on Conservation of water resources for irrigation purposes in India

Saanidhya Sharma[1] , Ayushi Gupta[2]
[1]B-tech student (6th semester),
[2]Assistant professor Department of civil engineering Dpg institute of technology sec 34 marble market Gurgaon Haryana

***Abstract*: In India it has been observed that due to spatial and temporal variations of precipitation it has been that boundless is varying from (1100mm to 90 mm). The annual per average per capita of water availability has been reduced from 5000 cubic meter in year (1950 to 1545 cubic meter) in year 2011 and it has been estimated to reduced further around (1341 to 1140 cubic meter) In year 2025 and 2050 , respectively . Agriculture sector provides the 56.4% of total employment to increasing population in INDIA alone it consumes more than 90% of total groundwater draft in irrigation . Over the years the groundwater supply has become important source of irrigation because of its independent access and timely availability of water .This outrageous dependency of groundwater has led to depletion of groundwater table in 64% of districts of country between 2002 to 2016. Due to collective effort of government at various levels by utilizing irrigating potential includes both surface and groundwater have been increased to 87mha while the ultimate irrigation potential has been increased at 140mha. In context of rapid depletion of water resources we can make sure that we can use water efficiently by using drip irrigation and sprinkler irrigation which are the subtype of sub-surface irrigation and the preservation of sub soil water act 2009 which prohibits the early plantation of rice for unproductive water evaporation and therefore its irrigation demand and in 2015 the government of India has launched the Pradhan Mantri Krishi Sinchayee Yojna (pmksy) scheme which includes the micro irrigation schemes as an integral component which are beneficial for farmers and as well as beneficial for water conservation for future uses . The government of India now days they are promoting water conservation technologies to farmers so that farmers can get inspired to learn such kind of technologies through various institutional supports systems which helps farmer to learn the conservation of water for future uses and by overusing and misusing of groundwater supply and totally depending on groundwater supply for irrigation has caused around (10-25 mm) per year between 2002 to 2016 so to recharge the groundwater table we can start doing the rain water harvesting for irrigation by constructing rainwater reservoir, check dams, sub-surface dams ,recharged wells , farms ponds, multilayer farming ,ditches, mulches in which water will start water will start seepin through the voids present in the soil in which water will seep like the capillary mechanism in soil and proper construction of canals for irrigation would be required otherwise it could lead to the overflown of water in canals which is supplied from dams and overflown of water in canals cause damage to the cops and it will also lead to the mis-management of water or wastage of water and with help of latest technology we can now days monitor the water requirement for crops by using water flow meter which helps to indicate that how much water required for irrigation, soil sensors with help of these sensors we can determine how much moisture is present in water and can also see the current state and situation of soil and with the help of these technology we educate farmers to use it in the proper and efficient manner and with the help of combination of ancient and modern water conservation techniques we can learn the proper management of water which is been used to for irrigation purposes as well as domestic purposes.**

Introduction

Efficient utilization of available of water resources is very now days for a country like in India which shares atleast 17% of the global population with only 2.4%of land and 4% of the water resources . The water per capita availability of water resources in terms of utilization which is around 5247mcube in 1951 (but in present 1453mcube) is expected to go down to 1170 mcube by 2050 . Agricultutre sector alone consumes around 80% of the groundwater which is been studied by (Harsha in 2017). The declining trend of groundwater level in all parts of country will become a huge concern for country's development .The overall efficiency of flood irrigation system range between 25-40% which is been told by (Amar singh in 2007).Overall the micro irrigation could help the farmers to increase the efficiency of water for the irrigation and hence helps us to save the water as well as energy and also increases the yield capacity increases and and the return of net per unit volume groundwater . The groundwater table can be improved or could be recharged by doing the rain water harvesting and construction of various practises of artificial conservation and improving the crop productivity . All these practices would emphasizes the need of water and conservation and improvement in water efficiency for crops and to achive more crops in per drops .The paper is firstly organized in such a manner that first of all it will highlight the current status of irrigation system and what are its challenges to improve the efficiency of water in irrigation and how can we recharge the groundwater supply of water and we conserve the water for future uses and lastly we can discuss on the various options to overcome these challenges , government intitiations for efficient manner of water management in agriculture

Status of irrigation in India

1. Irrigation system of INDIA is the main consumer of fresh water and more than 90% of groundwater drafted in INDIA . Growing population India is causing major pressure on water resources because if the population is increasing then the demand of food

will increase if the demand of food would increase then the demand of water would increase for irrigation

2. Now the country has reached at that situation where the demand of water from various sector of economy is increasing rapidly but the supply of fresh water is decreasing now days because of overuse of water for irrigation could damage the crops and hence also leads to the wastage of water by depending mostly on the groundwater supply for irrigation could lead to the lower the level of groundwater table and excessive use of chemical and fertilizers for the production of crops could fill the voids of soil through which the water gets seepin through the basin of soil and when the air voids are blocked by the fertilizer it will make the soil hard that water will not get the enough space seepin into the soil which will make the land barren because the amount of nutrition which are required for soil is not been provided due to the use of fertilizer and using of fertilizer has also destroyed the Ph level of the water by increasing the the salinity, nutrient pollution and wetlands could cause the poor water resources management system and climate change India faces the shortage of water
3. Net irrigated area of India has increased from nearly 18 to 48% because of the government interruptions at various levels .Although the government of India has proposed the plan to improve the canal system in various 5 years plan system but It has been delayed because of negligence or corruption by government employs by not doing work at time and keep delaying the project and taking money from the budget which has been approved for project by the government and if by chance the engineer complete the work on time the construction material used for the construction of canal system or repairing the canal's channel the material used for the construction or the dimension of canal is upto the standard or not right again it will cause huge damage to the crops and also cause the wastage of water in huge amount and because of that side walls of the canals will also been damaged now because of these obstacles now the farmers are independently getting relying on groundwater irrigation source for farming
4. Irrigation schemes and sources are planning commission has classified the irrigation India in 3 types namely major cultivable command area(>10000 ha) medium (cca <2000 ha) irrigation schemes has created irrigation potential increased around 22.8 million to 107.2mha while utilized irrigated potential 9 both surface and ground water) is increased to 87 Mha .

Since the 1950-51 the government of India has considered that that the development of the command area under canals are very important .As the result the gross area of 96.46Mha net irrigated area 68.38 Mha and food production is around of 275.11 million tones during 2016-17 . In 1950-51 the canal irrigation area was around 8.3 million hectares and recently in (2014-2015) which stands at 16.18 million hectares on the other hand the well and tube well estimation is around 29% in the total irrigated area and in 1950-51 now they are sharing around 63%of the total net irrigated area

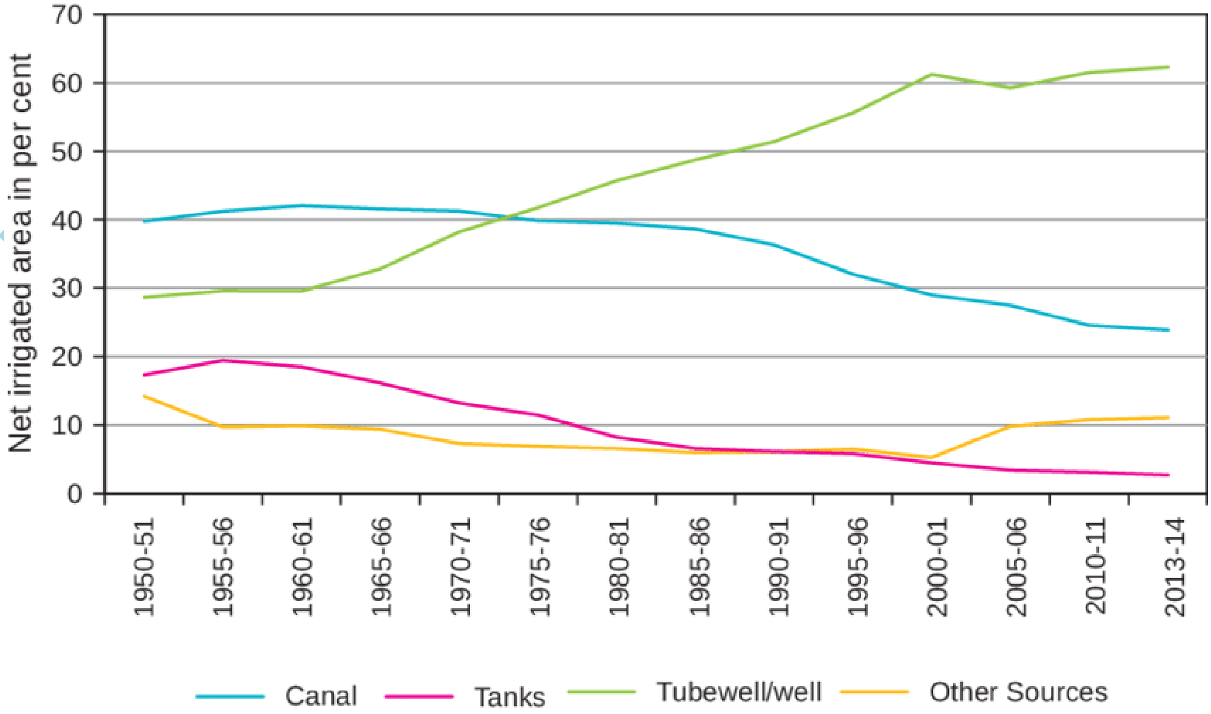


Table2. Net Irrigated area from various sources and their relative contribution

	2009-10 NIA	contribition	2014-15 Contribution	NIA
Canal	16.97	26.40	16.18	23.66
Tank	1,638	2.59	1.72	2.52
Wells	39.042	61.72	42.96	62.82
Others	5.880	9.30	7.52	11.0
Total	63.257	100	68.38	100

Challenges for irrigation in India

1. Depletion of water table : The government of India has invested nearly 4000 million of dollars for the canal systems for during 1991-2007 . but the canal irrigated area is decreased by 38 lakh of hectares during that time as the time passes the water supply system is getting old and and the water supply system is getting old and unreliable this effects the heavy expenditure on the canals for the government are not able to influence the famers to the canal system of irrigation and some point the government is not able to influence the government to reduce the dependence of groundwater supply so because of this water is continuously depleting the amin reason behind is widening the gap between the irrigation potential created and actually utilised .The states which are highly depending on the groundwater are Punjab and Uttar Pradesh and Uttarakhand and there dependency rate are (79%,80%,67%)

2. A number of mutual of reinforcing the social and socio-polictical factors combine to prevent any rational arrangement of irrigation water pricing by including the various factors are:

(a) lack of participation of farmers in the irrigation design project and implementation because of this they are not aware of the depletion of water table and they think that it is very easy to getting relying on ground watertable

(b) Penalties of project for personnel who fails to provide the desired level of services

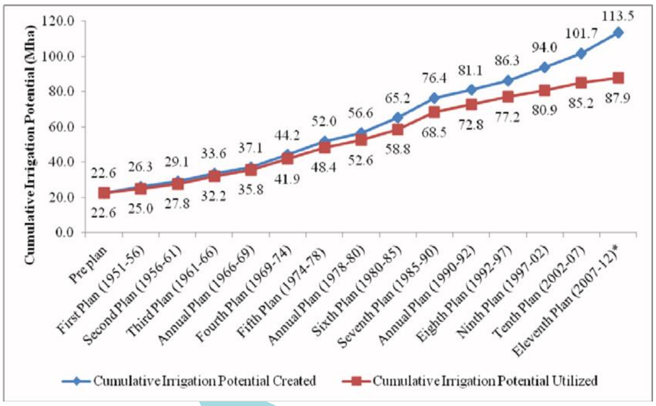
(c) User penalties for non-payment (water official are bribed not to full fiill the project on time)

(d) Agro-power subsides (pump at will) also rampant water piracy (diverting the water for irrigation use)

3.There is another factor that tells that opportunities for irrigation water pricing is the strong political enhancement of agrarian policies .for eg by providing farmers free rein to pump the groundwater

4. Tube wells are often adjacent to recharge the location to maximise the irrigation which is aggravating the groundwater depletion . They mark a lack of confluence of environmental awareness and the selfish tendency of individuals to maximise the personal benefits . This risk of elevates could cause the social conflicts and inequity which are exploited by political party

5.



It has been a large gap in utilization of creating the potential and the end of eleventh plan of total utilization for irrigation potential was to the extent of 87.86 million hectares showing .The main reason behind this is non-utilization for creating the potential which are delayed and involved in the development of farm works like construction of field channels and levelling , shaping and adoption of the warabandi system and switching over to the new crop pattern from the dryly irrigated farming pattern

6. Poor irrigation efficiency – The poor efficiency of irrigation causing bad effect on the groundwater table of the land and it is observed that overall

Water management and conservation resources

Table3. Irrigation efficiencies under different methods of irrigation

Method of irrigation

Irrigation Surface sprinkler Drip

Conveyance efficiency	40-50 (canal) 60-70 (well)	100	100
Application efficiency (%)	60-70	70-80	90
Surface water moisture evaporation	30-40	30-40	20-25
Overall efficiency	30-35	50-60	80-90

1. **Improving irrigation efficiency**

The traditional methods of irrigation has low irrigation efficiency excessive amount of seepage loss are inequitable and untimely supplies to figure out the seepage problem we have to start practising the rain water harvesting and micro-irrigation which plays an important role in improvement of water efficiency further the canal automation system and volumetric measurement of supply ,bench marking of irrigation system ,water audit / budgeting and appropriate price of water could increase the irrigation efficiency .The method which is commonly used in India is the flood irrigation which results in depletion of water in a huge amount of loss .Greater efficiency in irrigation has achieved through proper designing of irrigation system for reducing water for conveyance and loss adoption of water technology such as sprinkler and drip irrigation system and hence it has proven that it is extremely effective in not just water conservation but also about the leading of higher yielding ratio for crops

2. **Infrastructural development for adequate and regular water supply**

There is inadequate and irregular supply of canal water in many commands is because of the unaligned structure of the canals in which the level of the water sometimes gets overflown or could not get the level of water at certain level which causes the mismanagement of water as well as it could cause the damage to the crops and to tackle the conjunctive water use we to be facilitated and further creation and we need appropriate infrastructure make further changes in the structure of canal and the required infrastructure would help to supply the canal water and helps it seep's into the ground of soil

3. The phenomenon of local water succesfully manage their water resources has been observed in only a few years . The planning commission is recommended that local planners take the following steps while planning for ground water management

. Determine the relationship between surface hydrological units such as watershed or river basins and hydrological units below the ground such as aquifiers

. Identification of groundwater recharge areas

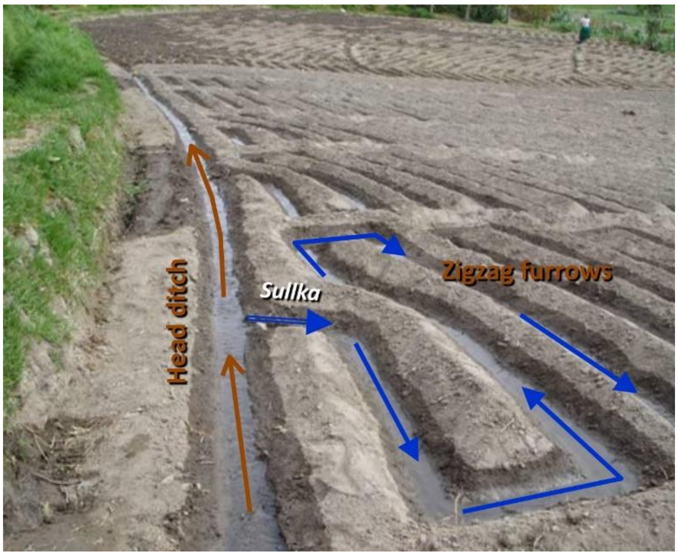
. Maintaining groundwater balance at the level of the village of the watershed

. Creating the regulatory options at the community level such as panchayat . for eg activities that could be regulated at the local level include drilling depth, distance between wells, cropping patterns to ensure the sustainability on aquifier and participatory ground water management

4. Now days we can recharge the groundwater table by doing the rain water harvesting various methods artificial Recharge of Groundwater through Dug Wells (Dug Well Recharge Scheme) The Dug Well Recharge Scheme is being jointly run by the CGWB, the state governments concerned and Nongovernment Organisations (NGOs) in the different hydrogeological and agro-climatic regimes of the country. The evaluation of the projects under this scheme reflects the importance of conservation and groundwater recharge in controlling the decline in ground water levels, augmentation of resources, and increased sustainability of wells besides mitigation of groundwater quality problems. As per the latest groundwater resource assessment carried out by the CGWB, jointly with the state level Groundwater Departments, out of 5,723 assessment units (Blocks/Talukas/Mandals) across the states, the position of 1615 units is in a critical situation due to groundwater exploitation. Among all the critical units, 839 units are over-exploited, 226 units are critical, and 550 units are in a semi-critical condition. In many areas in the critical units, hard rock aquifers have been found that have limited storage potential and are facing acute problems in terms of over-exploitation and depletion of groundwater resources. About 80 per cent of these groundwater-stressed areas are located in the hard rock area in the states of Andhra Pradesh (AP), Gujarat, Karnataka, MP, Maharashtra, Rajasthan and Tamil Nadu, wherein a rapid decline of groundwater levels has been observed on a long-term basis. The Dug Well Recharge The Dug Well Recharge Scheme is also slated to be implemented by the respective state governments in association with Panchayati Raj Institutions (PRIs), the CGWB, the National Bank for Agriculture and Rural Development (NABARD), and some NGOs, among other organisations. The objective of this scheme is to set up 4.455 million of the existing irrigation dug wells for the identified beneficiaries. Artificial groundwater recharge through the existing dug wells is thus expected to significantly improve the groundwater situation in the affected areas. The dug well schemes are also anticipated to increase the sustainability of wells during lean periods and to improve productivity of the overall irrigated agriculturage Scheme, which is a state sector scheme, is primarily being implemented in these areas.

5. Annual groundwater recharge from all sources from rainfall

The present scenario pertaining to groundwater recharge does not show any conclusive trends. There is no positive progress with regard to groundwater aquifers even as the groundwater exploitation rate is increasing day by day. An analysis of the data for the years 2004 and 2009 on groundwater recharge from non-rainfall sources indicates that during the non-monsoon season, the quantity of water is higher as compared to the monsoon season. This also demonstrates that Government policies and schemes have proved to be effective in bringing about a positive change in groundwater development and that a large amount of surface water has been successfully converted into groundwater through artificial recharging. However, the figures for 2009 show a decreasing trend as compared to 2004 with regard to groundwater recharge through non rainfall sources. The reason for this could be the high degree of rainfall during the 2004 monsoon, which led to a notable increase in the availability of surface water. Here, it may be observed that the groundwater recharge through rainfall during the non-monsoon period shows a more positive picture in 2009 as compared to that in 2004. Hence, the success of groundwater recharge depends on the quantum of rainfall and its effective conservation through rainwater harvesting



 # Ditch and furrow system

In areas with irregular topography, shallow, flat bottomed and closely spaced ditches or furrows provide maximum water contact area for recharge water from source stream or canal. This technique requires less soil preparation than the recharge basins and is less sensitive to silting.

. Dendritic Pattern

The water from stream can be diverted from the main canal to a series of smaller ditches spread in a dendritic pattern. The bifurcation of ditches continues until practically all the water is infiltrated in the ground.

 # Contour Pattern

The ditches are excavated following the ground surface contour of the area. When the ditch comes closer to the stream a switch back is made and thus the ditch is made to meander back and forth to traverse the spread are repeatedly. At the lowest point down stream, the ditch joins the main stream, thus returning the excess water to it.

 # lateral ditch pattern

The water from stream is diverted to the feeder canal/ditch from which smaller ditches are made at right angles. The rate of flow of water from the feeder canal to these ditches is controlled by gate valves. The furrow depth is kept according to the topography and also with the aim that maximum wetted surface is available along with maintenance of uniform velocity. The excess water is routed to the main stream through a return canal along with residual silt.

Percolation Tanks (PT) Spreading Basin These are the most prevalent structures in India as a measure to recharge the ground water reservoir both in alluvial as well as hard rock formations. The efficacy and feasibility of these structures is more in hard rock formation where the rocks are highly fractured and weathered. In the States of Maharashtra, Andhra Pradesh, Madhya Pradesh, Karnataka and Gujarat, the percolation tanks have been constructed in plenty in basaltic lava flows and crystalline rocks. A typical design of PT is given in Fig. 3 The percolation

Important Aspects of Percolation Tanks:

a. A detailed analysis of rainfall pattern, number of rainy days, dry spells, and evaporation rate and detailed hydrogeological studies to demarcate suitable percolation tank sites.

b. In Peninsular India with semi arid climate, the storage capacity of percolation tank be designed such that the water percolates to ground water reservoir by January since the evaporation losses would be high subsequently.

c. Percolation tanks be normally constructed on second to third order stream since the catchment so also the submergence area would be smaller.

d. The submergence area should be in uncultivable land as far as possible.

e. Percolation tank be located on highly fractured and weathered rock for speedy recharge. In case of alluvium, the bouldary formations are ideal for locating Percolation Tanks.

f. The aquifer to be recharge should have sufficient thickness of permeable vadose zone to accommodate recharge. g. The benefitted area should have sufficient number of wells and cultivable land to develop the recharge water.

h. Detailed hydrological studies for run off assessment be done and design capacity should not normally be more than 50% of total quantum of rainfall in catchment.

 # Check Dams Cement Plug nala bunds Check dams

These are constructed across small streams having gentle slope and are feasible both in hard rock as well as alluvial formation. The site selected for check dam should have sufficient thickness of permeable bed or weathered formation to facilitate recharge of stored water within short span of time. The water stored in these structures is mostly confined to stream course and the height is normally less than 2 m. These are designed based on stream width and excess water is allowed to flow over the wall. In order to avoid scouring from excess run off, water cushions are provided at down streamside. To harness the maximum run off in the stream, series of such check dams can be constructed to have recharge on regional scale. A series of small bunds or weirs are made across selected nala sections such that the flow of surface water in the stream channel is impeded and water is retained on pervious soil/tock surface for longer body. Nala bunds are constructed across bigger nalas of second order streams in areas having gentler slopes. A nala bund acts like a mini percolation tank. The design aspects of check dam

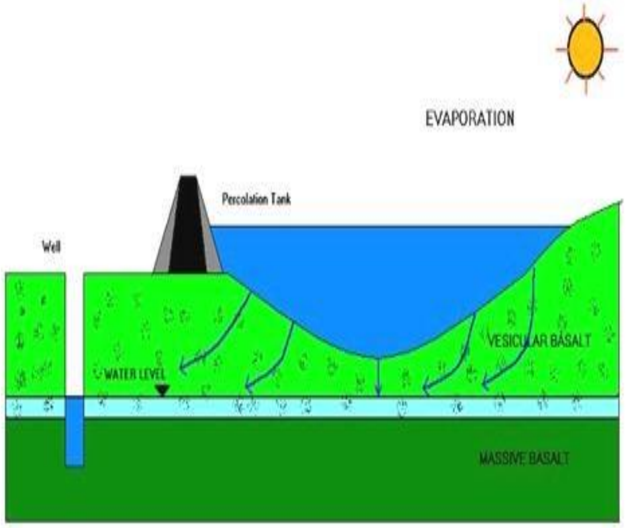
#Site Characteristic and Design Guidelines

For selecting a site for Check Dams/Nala bunds the following conditions may be observed.

1. The total catchment of the nala should normally be between 40 to 100 Hectares. though the local situations can be guiding factor in this.
2. The rainfall in the catchment should be less than 1000 mm/annum.
3. The width of nala bed should be atleast 5 metres and not exceed 15 metres and the depth of bed should not be less than 1 metre.
4. The soil down stream of the bund should not be prone to water logging and should have pH between 6.5 to 8.
5. The lands downstream of Check Dam/bund should have irrigable land under well irrigation.
6. The Nala bunds should be preferable located in area where contour or graded bunding or lands have been carried out.
7. The rock strata exposed in the ponded area should be adequately permeable to cause ground water recharge through ponded water.
8. Nala bund is generally a small earthen dam, with a cut off core wall of brick work, though cement bunds/plugs are now prevalent.

 # Gabion structure

This is a kind of check dam being commonly constructed across small stream to conserve stream flows with practically no submergence beyond stream course. The boulders locally available are stored in a steel wire. This is put up across the stream's mesh to make it as a small dam by anchoring it to the streamside (fig 5). The height of such structures is around 0.5 m and is normally used in the streams with width of about 10 to 15 m. The cost of such structures is around Rs.10 to 15000/-. The excess water overflows this structure storing some water to serve as source of recharge. The silt content of stream water in due course is deposited in the interstices of the boulders to make it more impermeable. These structures are common in the State of Maharashtra, Madhya Pradesh, Andhra Pradesh



Inter Watershed Transfer

The percolation tanks in a watershed may not have enough catchment discharge though a high capacity tank is possible as per site conditions. In such situations stream from nearby watershed can be diverted with some additional cost and the tank can be made more efficient. Such an effort was made in Satpura Mountain front area at Naga devi Jalgaon district, Maharashtra. The existing capacity of the tank of 350 TMC was never utilised after its construction. This could however be filled by stream diversion from adjacent watershed.

Recharged shaft

These are the most efficient and cost effective structures to recharge the aquifer directly. In the areas where source of water is available either for some time or perennially e.g. base flow, springs etc. the recharge shaft can be constructed (Fig 8). Following are site characteristics and design guidelines: -

(i) To be dug manually of the strata is non-caving nature.

(ii) If the strata is caving, proper permeable lining in the form of open work, boulder lining are should be provided.

(iii) The diameter of shaft should normally be more than 2 m to accommodate more water and to avoid eddies in the well.

(iv) In the areas where source water is having silt, the shaft should be filled with boulder, good and sand from bottom to have inverted filler. The upper most sandy layer has to be removed and cleaned periodically. A filter be provided before the source water enters the shaft.

(v) When water is put into the recharge shaft directly through pipes, air bubbles are also sucked into the shaft through the pipe which can choke the aquifer. The injection pipe should therefore be lowered below the water level, to avoid this .

The main advantages of this technique are as follows: - * It does not require acquisition of large piece of land like percolation tanks.

* There are practically no losses of water in the form of soil moisture and evaporation, which normally occur when the source water has to traverse the vadose zone

* Disused or even operational dug wells can be converted into recharge shafts, which does not involve additional investment for recharge structure.

* Technology and design of the recharge shaft is simple and can be applied even where baseflow is available for a limited period.

* The recharge is fast and immediately delivers the benefit. In highly permeable formation, the recharge shaft are comparable to percolation tanks with no submergence and hence no land compensation to local farmers. The recharge shafts can be constructed in two different ways viz. Vertical and lateral.

.#Recharging of Bore Wells

Rainwater collected from the rooftop of the building is diverted through drainpipes to settlement or filtration tank. After settlement, filtered water is diverted to bore wells to recharge deep aquifers. Abandoned bore wells can also be used for recharge .Optimum capacity of the settlement tank/filtration tank can be designed based on the area of catchment, intensity of rainfall, and recharge rate. While recharging, entry of floating matter and silt should be restricted because it may clog recharge structure.

.Recharge Pits

Recharge pits are small pits of any shape rectangular, square, or circular contracted with brick or stone masonry wall with weep hole at regular intervals. Top of the pit can be covered with perforated covers. The bottom of the pit should be filled with filter media.

The capacity of the pit can be designed based on the catchment area, rainfall intensity, and recharge rate of the soil. Usually, the dimensions of the pit may be of 1 to 2 m width and 2 to 3 m deep, depending on the depth of previous strata.

#. Recharge Trenches

The recharge trench is provided where upper impervious layer of soil is shallow. The recharge trench excavated on the ground and refilled with porous media like pebbles, boulders, or brickbats. It is usually made for harvesting the surface runoff.

Bore-wells can also be provided inside the trench as recharge shafts to enhance percolation. The length of the trench is decided as per the amount of runoff expected.

This method is suitable for small houses, playgrounds, parks, and roadside drains. The recharge trench can be of size 0.50 to 1.0 m wide and 1.0 to 1.5 m deep.

 # Goverment initiatives on irrigation management

1.Watermanagement organisation like central water commission are promoting and getting integrated and sustainable development for the management for water resources were established CWC and CWGB and had formulated the general guidelines for water audit and water conservation. These guidelines have been circulated to all the state government concerned central ministries and other utilities for framing their own specific guidelines . Following these guidelines some of the

2. Subsidy to improve the efficiency of irrigation system is to mitigate the water scarcity band reduce the irrigation water demand and government has mainly focused on the efficiency on the water supply scheme at the centre as well as state is providing huge subsidies to increase the adoption of rate of efficient irrigation method like micro irrigation method and drip irrigation method . These includes the district of south and north interior Karnatka , Andhra Pradesh , western Rajasthan

3. Various schemes launched by central government led emergence of micro irrigation : Recognising the importance of micro irrigation central government emphasized on micro irrigation (in 1992, 2006 centrally sponsored by scheme in micro irrigation) the schemes of irrigation according to the Pradhan Mantri krishi sinchaye yojna which was launched in 2015 according to this scheme the government is creating the infrastructure to bring the water to farming land and watershed development . All the programs scheme have been intiatyed by government with specific objectives to improve the water use efficiency and water productivity by raising more crops per drop of water . Despite these efforts still a specialised solution is required in chreonically water stressed areas where measurs are implemented until now they are ineffective and understanding best practises from other countries and India own community based interventions models will help policy thinkers and planners to enhance the governance structure band understand the key indicators that could assist the data driven indications

Table6 Distribution of micro irrigation area by among states and penetration to gross sown area

State	Drip(%)	Sprinkler(%)	Total(%)	Penetration
Andhra Pradesh	24.1	7.9	15.5	20.6
Gujarat	13.3	11.8	12.5	10
Haryana	0.6	10.3	5.8	9.1
Karnatka	12.2	12.9	12.5	10.5
Madhya pradesh	6.1	4.2	5.1	2.2
Maharashtra	22.8	8.3	15.1	6.6
Rajasthan	4.8	29.4	17.9	7.6
Tamil Nadu	8.6	1.7	4.9	8.4
Telangana	3.4	1.1	2.2	1.2
Others	4	12.5	8.6	1.2
Total area (MHA)	100 (4.7)	100(5.6)	100(10.3)	198.4
Potential area (]MHA)	27	42.5	69.5	
achievement to potential	17.4	13.2	14.8	

Conclusion

In India the groundwater table depletion is a major problem in the irrigation because maximum number of farmers are only dependant on the the ground water supply and it is because of the independent access towards the groundwater supply and the groundwater is continuously depleting, to stop the continuous depletion of groundwater we have to start doing the rain water harvesting which helps to recharge the level of the groundwater and helps to resist the dependency on groundwater by taking the water supply from canals which are aligned and properly able to supply the water to the farms and recharging the water from the reservoir and making digging trenches and drafts will also helps to recharge the groundwater when the water starts getting seep in to the ground though voids present in the soil and digging farming ponds also helps to recharge the groundwater because the water is directly supplied to the soil through void the water seeping into the ground . These are the ways through we can conserve the water resource for irrigation and hence these practises helps us to free from the dependency on groundwater and drip and sprinkler irrigation helps to save atleast 71% of water for irrigation and government should influence and educate the farmers to learn the new technology to conserve the water for irrigation and government should also influence the farmers on the practising on organic farming because fertilizers used by farmers in the field could destroy Ph value of water and its quality and hence the fertilizer blocks the void of soil through which gets seep into the land and hence it destroy the vegetation of soil and crops .

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