

Groundwater Regulation & Management - Experience of Maharashtra



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1. Issues that led to GW legislation

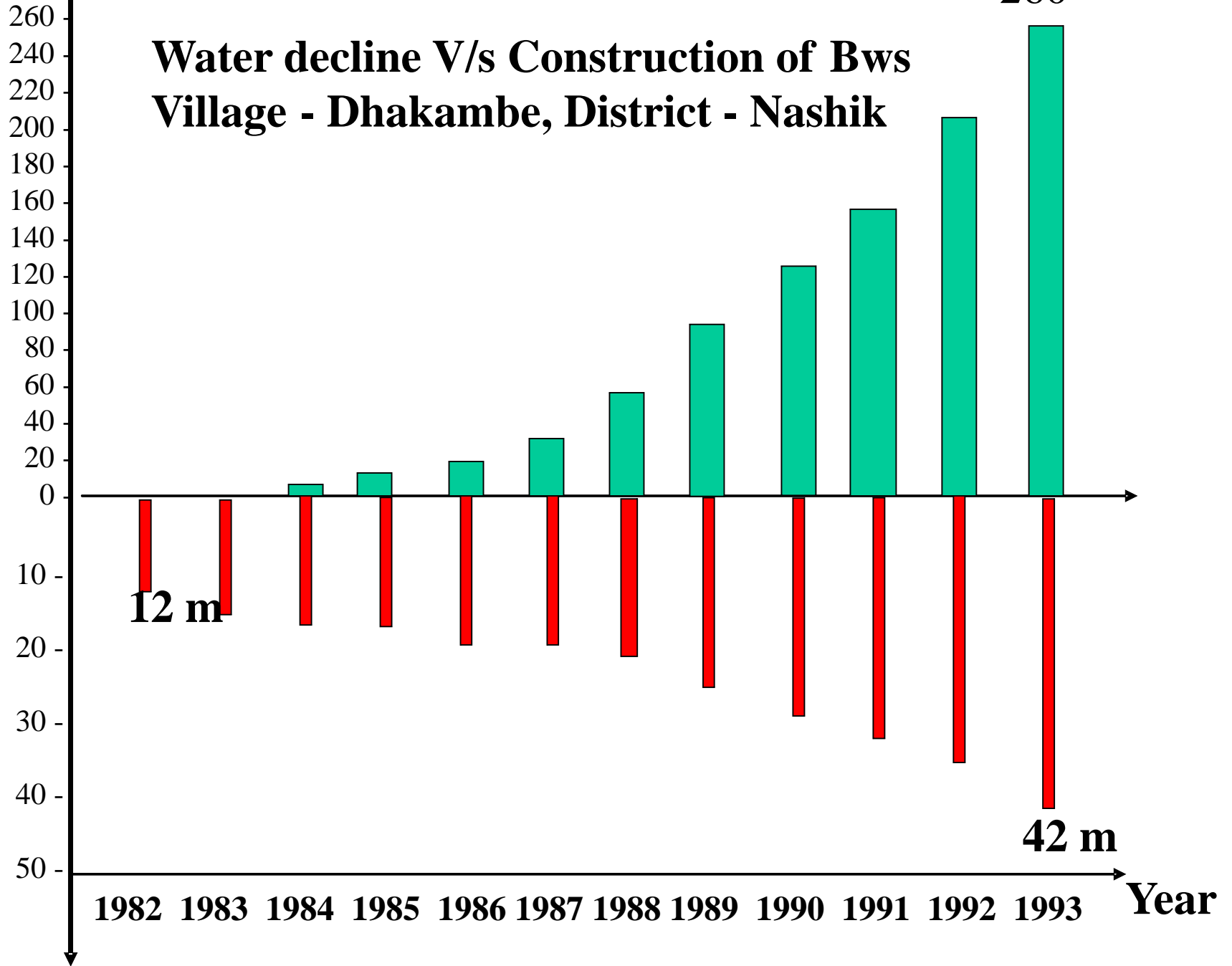
More stress on groundwater

- Population – accelerated growth
- Improved living standard
- Adoption of more water consuming crops
- Increased gap between demand and supply
- Gap greater during drought years
- Mushrooming of rigs
- Tendency of sinking wells in close vicinity
- **Supply Driven Groundwater Development (Vicious Circle) in some areas.**

No. of Irrigation BWs

Water level bgl mt.

Water decline V/s Construction of Bws Village - Dhakambe, District - Nashik



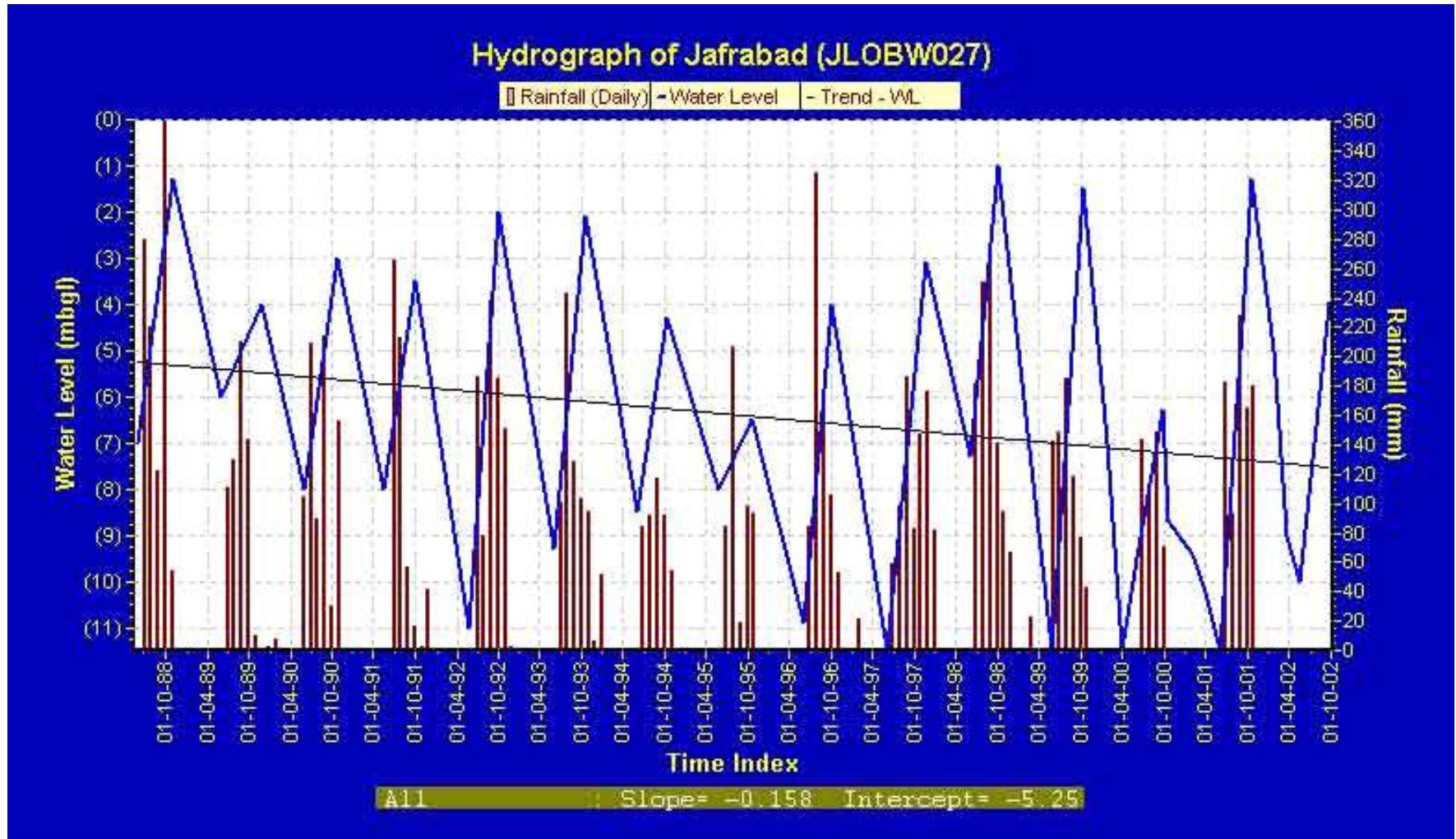
1. Issues that led to GW legislation



sinking wells in close vicinity

1. Issues that led to GW legislation

Village – Jafrabad, Taluka – Jafrabad, District – Jalna.



1. Issues that led to GW legislation



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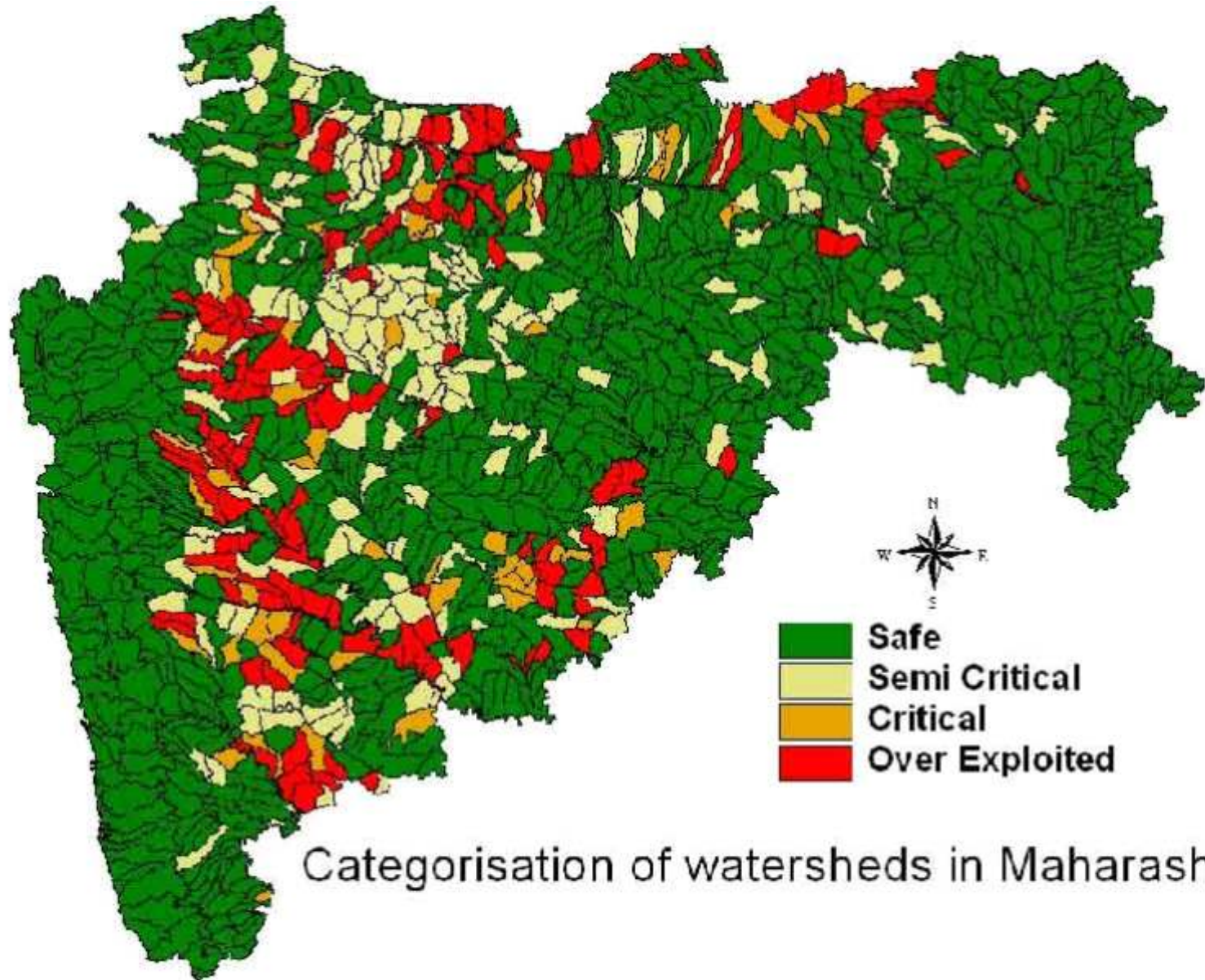
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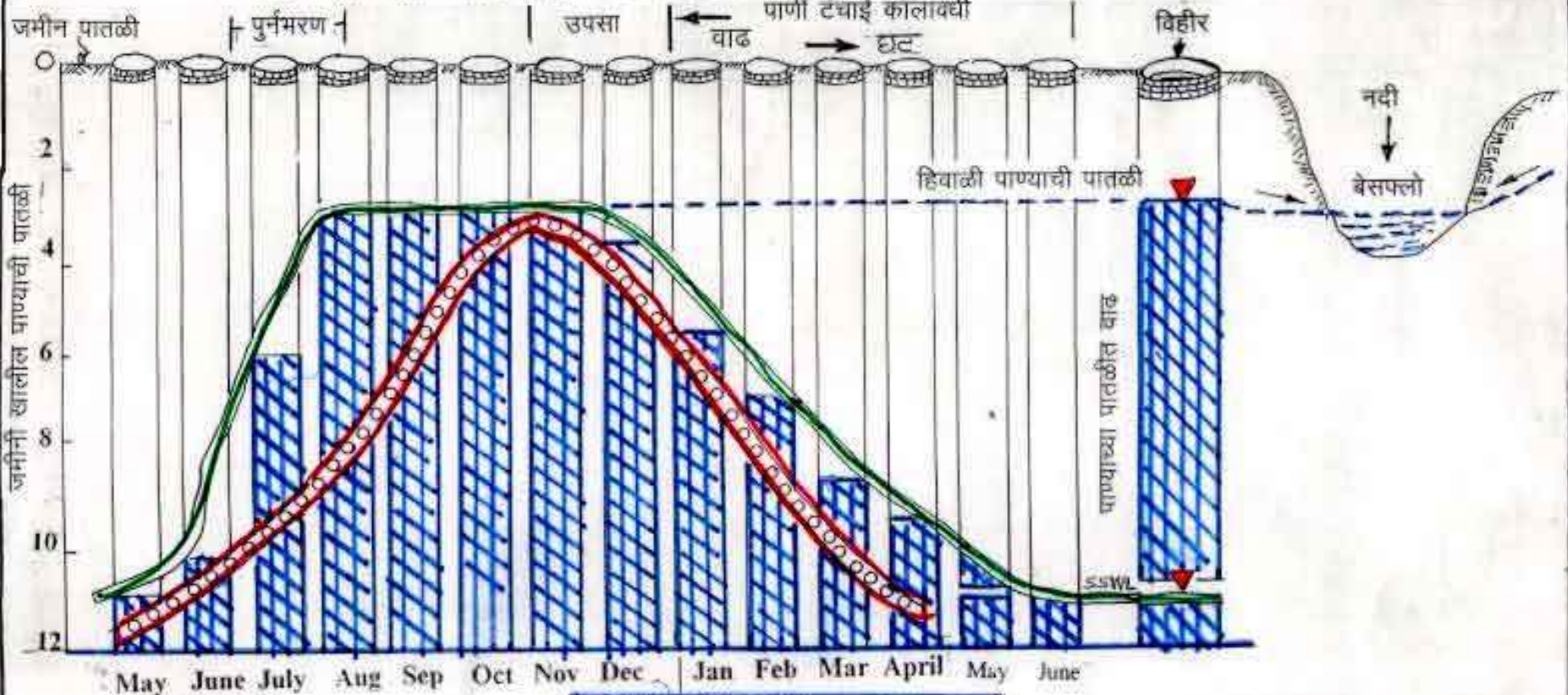
6th Assessment Result



Categorisation of watersheds in Maharashtra

पाण्याच्या शाश्वत उपलब्धेसाठी भूजल व्यवस्थापन

आकृती क्र. 3



पुरवठा → आवश्यक व्यवस्थापन कार्यवाही

- मागणी →
- १) भूजल अधिनियम
 - २) पिकातील बदल
 - ३) सिंचन पद्धतीत बदल
 - ४) सानुग्रह अनुदान कमी करणे
 - ५) जल साक्षरता
 - ६) पाण्याचा पुनर्वापर
 - ७) माहिती संकलन व उपभोगत्यांना माहिती अदान प्रदान

- जल संघारण
- कृत्रिम भूजल पुनर्भरण
- छता वरील पावसाचे पाणी संकलन

सूची

- मूजल पातळी व्यवस्थापनाच्या कार्यवाही पूर्वी
- मूजल पातळी व्यवस्थापनाच्या कार्यवाही नंतर
- जलस्तर

1. Issues that led to GW legislation

Increase in scarcity period
despite Normal rainfall

FC -> **PC** -> **NC**

Investment became infructuous
Mining of GW in some pockets

*Need was felt to transfer vicious
circle into a virtuous circle*



- *Regulation and control on groundwater development through GW Legislation*
- *Shift from development curiosity to management anxiety*

*Need of
the time*

3

***Brief Provisions under
Maharashtra GW Act, 1993***

Provisions

- Protection of all notified DW sources up to 500 mt. Distances
- Declaration of water scarcity area
- Restriction on pumping from wells located up to 1 km distance from DW source
- Control on GW development in over exploited watersheds
- Other legal and penal provisions

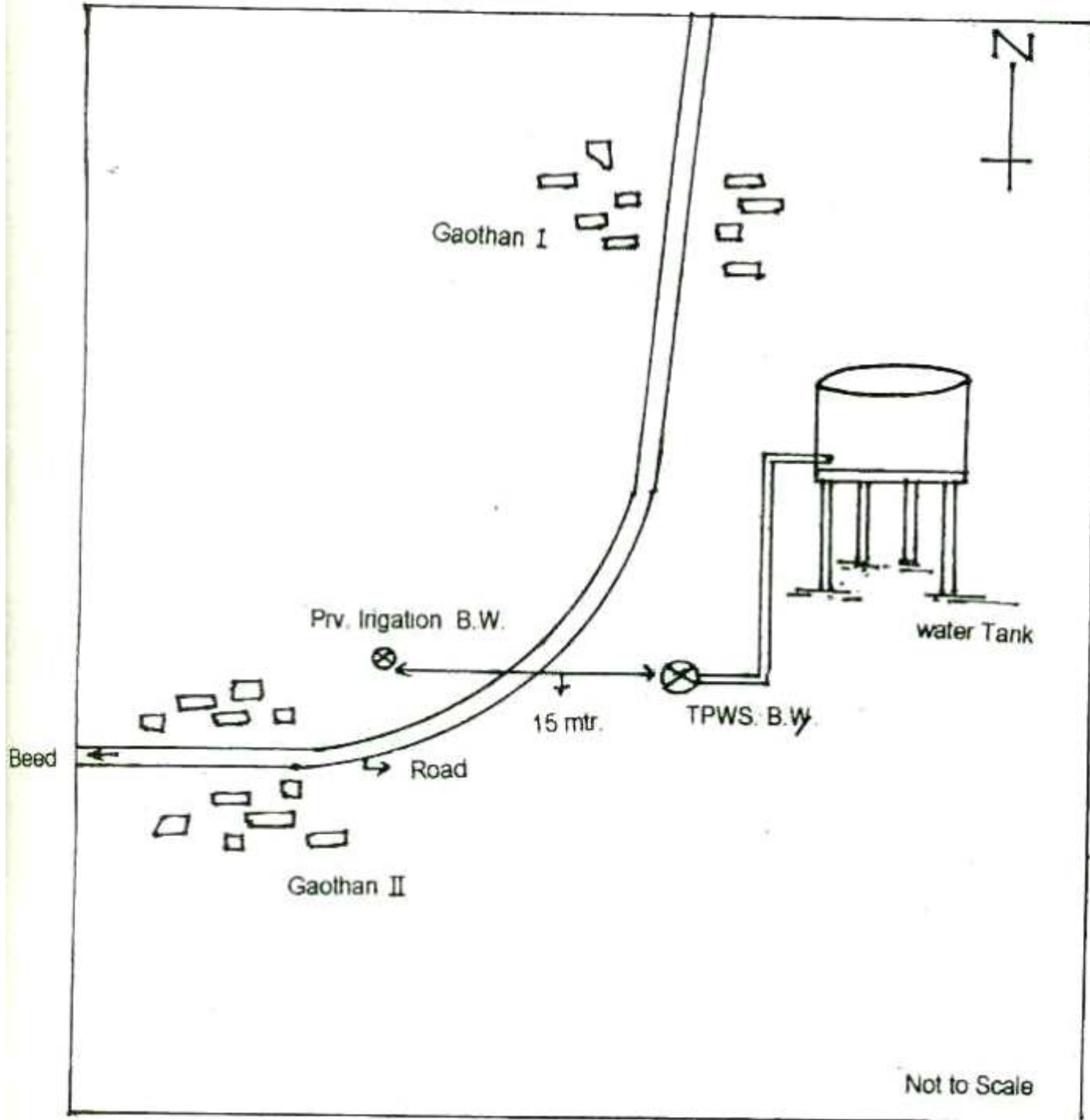
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Some Experiences and Lessons learnt in GW Act implementation

Some Experiences and Lessons learnt in GW Act implementation

- Case Study (Success) :- Village - Pimpalgaon Manjara, District - Beed
 - TPWS source :- High yielding BW
 - Private high yielding BW for irrigation at 15 mt. Distance
 - Direct impact on source well
 - Matter reported to Collector
 - Collector sought technical advise of GSDA
 - GSDA observed interference and reported to Collector
 - Collector stopped pumping from private irrigation well
 - *Villagers get regular water supply*

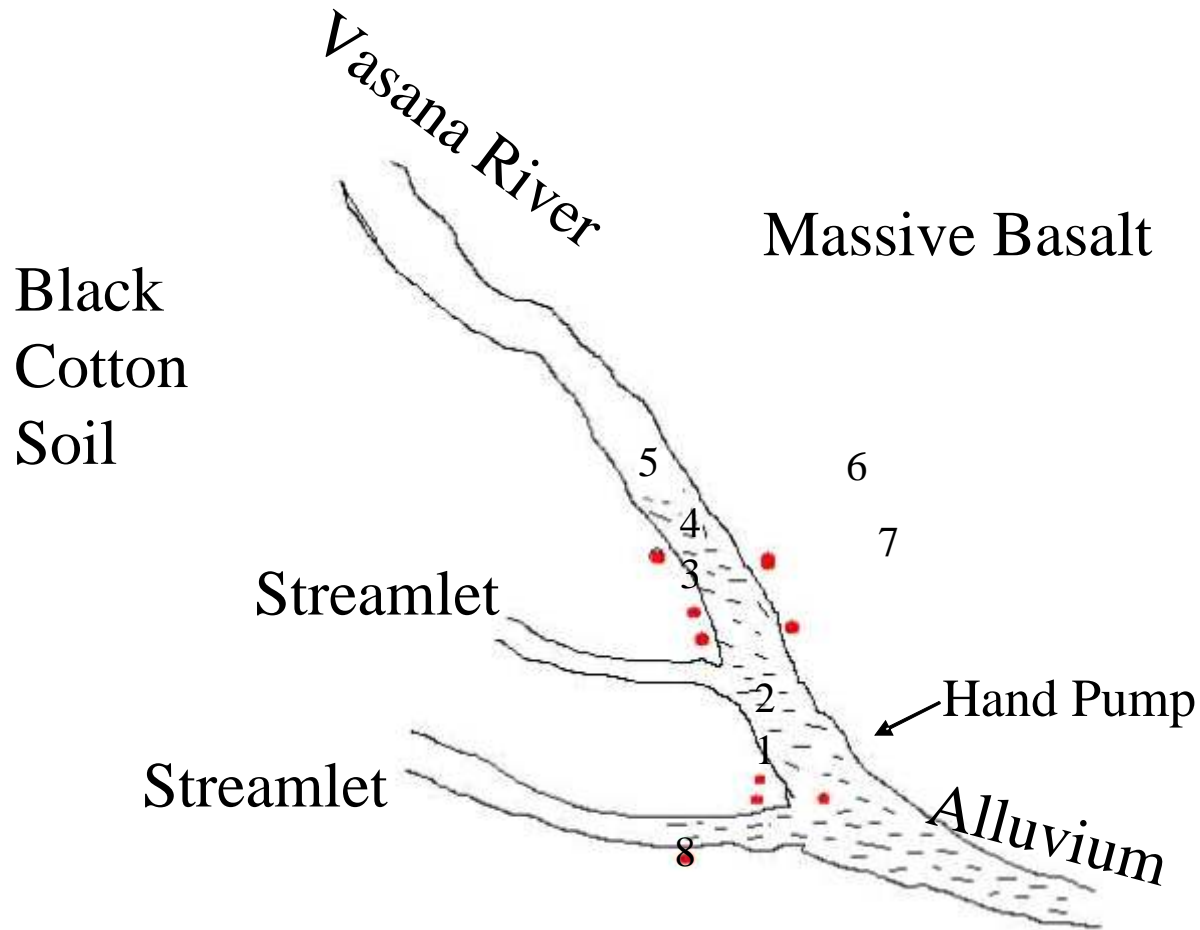
Village -
Pimpalgaon
Manjara,
District - Beed



Some Experiences and Lessons learnt in GW Act implementation

- Case Study (Success) :- Village - Sonke, District - Satara
 - Source notification by Collector
 - Awareness with Sarpanch
 - Initiative to pursue with Govt. despite political interference and pressure by farmers
 - Initiative and awareness with Govt. Officers, used powers
 - GSDA's prompt technical advise
 - stopped construction of new wells in the vicinity
 - *Achieved regular water supply*

Village - Sonke, District - Satara



Village - Sonke, District -Satara – Construction of new dugwell stopped



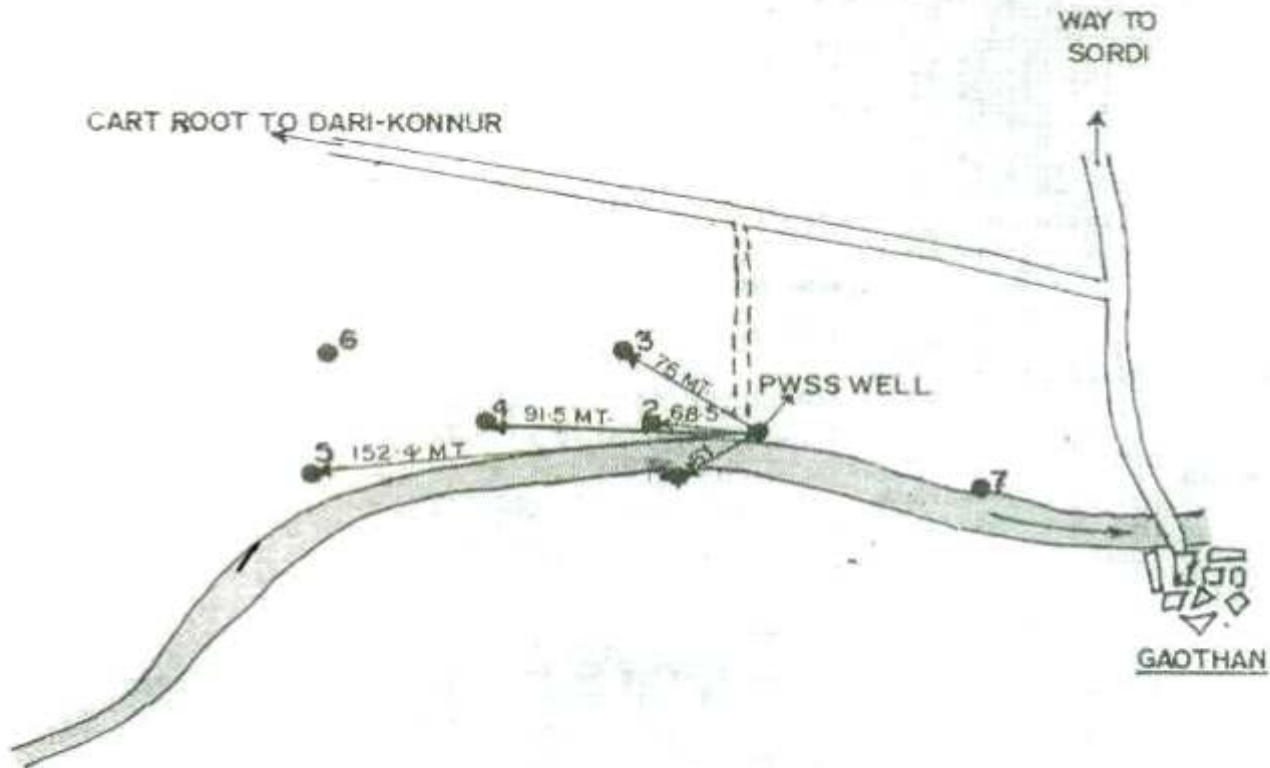
Some Experiences and Lessons learnt in GW Act implementation

- Case study (Failure) :- Village -Daribidchi, District - Sangli
 - Over all lack of awareness
 - Sarpanch aware but fails to report
 - Failure led to construction of 6 additional dugwells in the vicinity
 - Sarpanch reported late by one month ... delay led to over exploitation of GW
 - Water supply less than 20 LPCD
 - Deployed tanker and constructed BW to a depth of 105 mt. As a scarcity measure
 - *Failure in timely reporting and Ineffective implementation led to water scarcity situation and subsequent unnecessary investments*

SKETCH OF EXISTING IRRIGATION WELLS
WITH RESPECT TO GAOTHAN & PWSS WELL
VILLAGE - DARIBIDCHI, TALUKA - JATH,
DISTRICT - SANGLI.



(NOT TO SCALE)



Why Success ?

- Reactive participation and development of user organization
- GW considered as finite resource
- Campaign for water conservation and protection
- Recognition of water as a social and economic good
- Recognition of side effects of overexploitation
- Effective interaction and communication between stakeholders and government authority
- Stakeholders and regulator share responsibility in water resource management

Why Failure ?

1. Economic value of water is hardly recognized
2. Lack of initiative and mass awareness
3. Little interaction between regulator and water users
4. Little concern for side effects of overexploitation
5. GW considered as infinite and free resource
6. Competition between water users

Some Experiences and Lessons learnt in GW Act implementation

- Revision required in GW rights
- Limitations of GW Act to be removed
- Database up to 1 km distance required
- Ineffective institutional arrangements
- Accuracy in prediction of water scarcity area to be developed

Contd.

Some Experiences and Lessons learnt in GW Act implementation

1. Balancing the exploitation with the increasing demands
2. Sector reform approach to recognize that managing GW is as much about managing people
3. Integration of demand side management with supply side management
4. Regulatory interventions and economic tools become more effective if implemented with high level of user participation

Contd.

Some Experiences and Lessons learnt in GW Act implementation

- Key challenges for GW resource management need to be addressed
 1. Regulatory provisions should not go beyond Govt. capacity to enforce and users capacity to comply
 2. No simple blue print for IWRM can be readily provided due to location specific hydrological and socio-economic conditions.
 3. Capacity building of both those in water resource authority and amongst water users
 4. Have limited perspective and concern only with regulation of drinking water supply under certain conditions.

Proposed Revision of GW Act by the State of Maharashtra in response to revised model bill (1992, 1996).

1. Prepared Comprehensive Draft Bill, 2000
2. To enhance scope of GW Act, 1993 and to make it more comprehensive
3. Creation of GW authority at state level

Responses / Suggestions from NGO's / VO's/ Planners / Policy makers to comprehensive Draft Bill, 2000

- Good step
- Basin / Sub-basin wise Management
- Restructuring of GSDA (Basin / Sub-basin wise)
- Policy to use GW comprehensively for all uses and not for DW in isolation
- Volumetric water supply for all uses
- Sewage disposal without reuse

Cont..

Responses / Suggestions from NGO's / VO's/ Planners / Policy makers to comprehensive Draft Bill, 2000

- Sugarcane growing villages being supplied water through tankers – controversy
- Provisions to be tested on pilot basis in water scarce districts only and not necessary for entire state
- No thought on control on GW withdrawal in urban areas and industries
- Regulation and management of GW to include protection, conservation and rejuvenation also
- Users involvement and contribution in planning, execution and maintenance of the schemes

Cont..

Responses / Suggestions from NGO's / VO's/ Planners / Policy makers to comprehensive Draft Bill, 2000

- More stress on traditional methods of water harvesting i.e. adoptable, economical, acceptable and manageable through community participation
- Recycling of irrigation to be mandatory
- Second and third crop through GW to be banned
- GW potential of deeper aquifers to be reserved for DW purpose
- Withdraw subsidy for power
- Regulation on water marketing

To take Holistic view of
Ecological, Legal, Social,
Economical and
Institutional issues

Need of the hour

Drawn on the lines/approach adopted

- IWRM approach.
- Other countries experience –
 - South Africa (1997 - 99),
 - Western United States (Watershed Management Act of Washington, 1998).
- GOI - Model Bill.
- Other State Government, legislation.
- Maharashtra GW Act '93' provisions –
 - Control GW Development 500 m. distance.
 - Regulate, restrict, prohibit GW development in Over Exploited Watersheds.
- Maharashtra Water & Irrigation Commission (1999) - recommendations.

Addresses important Management Challenges.

- Water logging.
- Water Pollution.
- Water Quality.
- End use efficiency
- Conjunctive Use.
- Allocations.
- Environmental Considerations.
- Surface Water Aspects.

Long Term Strategy

- High level of abstraction with sound balance between competitive stakeholders interest and ecosystem needs
- Integrated resource management with high level of user self regulation guided by aquifer modeling and monitoring
- Regulatory frame work based upon comprehensive resource assessment
- Active regulation and enforcement by dedicated agency with more emphasis on people awareness and water users / stakeholders participation



Long Term Strategy

- Sector Reform & IWRM Approach
- Capacity building of the community to self manage and self regulate water resources
- Provisions to be implemented by the community organising themselves
- Legislative framework flexible enough for trial and testing
- New model GW legislation to emerge from the feedback from the community
- Initiate Series of pilot management projects
- Testing of alternative management approaches.

•What is needed for Successful implementation of Legislation ?

- Institutional framework to enable effective participation of users /communities
- Empowerment of users/community as well as Govt. authority to shape management approaches.
- Clear understanding of the institutional roles and functions at all relevant levels
- An adequate level of capacity building, public awareness and acceptance of legal provisions by users/communities.
- Political willingness to promote and attain sustainable GW Management and enforce regulations.



*...Integrate Traditional Wisdom
with modern techniques*

*...Integrate supply augmentation
measures with demand
management options and*

*... ensure right quality of water
... in right quantity*

...at right time

...in right place

*...through involvement of village
community*

Thank you