

# Water Budgeting

## Tool for improving water governance at local level

### Why Water Budgeting?

Many observations show, the water resource in many parts of India is speedily becoming more vulnerable. Although, water conservation measure in terms of supply side are being taken extensively at various levels, the major challenge in the water sector today lies in changing the existing mind-set of people from 'private ownership' to 'water as common pool' and to promote demand side management. Climate change, and specifically the increasing erratic rainfall, worsens the situation. As there is a limit to harvest water in any location, the wise use of available water with a systematic planning process holds the key to achieve the water security in villages. Implementation of water budget plans helps to deal with this challenge. The water budgeting tool is important in following manner:

- Game changer tool for contributing to drought proofing strategies and drinking water security;
  - Addressing water shortage for domestic and livelihood needs of rural and agrarian communities as well as water required for ecosystem sustenance.
  - Dealing with incidences of crop failure and low crop yield because of water scarcity.

- Supportive for implementing major provisions of policies and Acts in water and agriculture sector at centre and state level, such as Maharashtra Groundwater Act, 2009, Centre's Model Groundwater Bill 2016, etc.
- Evaluating the cumulative effects of land and water uses within watersheds and setting the targets for water conservation.
- Addressing growing water scarcity due to projected climate change and erratic rainfall in context of projected 1.5 degree celsius global temperature rise.
- Achieving Sustainable Development Goals (SDGs), especially SDG 6-Ensuring availability and sustainable management of water and sanitation for all, and SDG 12-Ensuring sustainable consumption and production patterns (of natural resources).

While working in seven Indian states for last more than two decades, WOTR found Water budgeting tool very powerful if get implemented through overall water stewardship approach. It is useful to motivate communities to safeguard water availability. This tool has very high potential to transform the behavior of water-users regarding water use and cropping practices.

**महाराष्ट्राच्या दुष्काळप्रवण भागात पाण्याचा शाश्वत, कार्यक्षम आणि समन्यायी पाणी वापर कार्यक्रम**

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ORACLE WOTR water gives life

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## What is Water Budgeting?

Most of us maintain an account in a bank or a post office where we regularly save money for our future needs or security. The principles of a bank account works in the following manner,

- You save amount in your account at certain time interval so that your saving/credit increases steadily.
- For your different needs, you periodically withdraw certain amount while ensuring that there is sufficient balance in account for future immediate needs.
- The more amount you save, the more interest you earn which adds to your savings.
- But, in no case you can withdraw amount more than your total savings in the account.
- If you have zero balance in your account, you have no or zero credit in the bank.

**Imagine what will happen if you withdraw all your savings at one-time from your account and spend it?**



The big lesson for maintaining the bank account is that our withdrawals should not exceed savings and there is always sufficient balance in the bank account.

Water budgeting is similar to balancing the bank account. Consider, all water getting available annually for the village from rainfall (in terms of soil moisture, surface and groundwater) is your savings whereas the total amount of water getting lost and used for all needs (such as domestic, crops, irrigation, evapotranspiration etc.) as withdrawal from your account.

In short, water budgeting is 'an estimate of harvest of water resources and its utilization for a set period of time. It is the process which mainly assess a) the volume of available water (in form of surface water and groundwater recharge and soil moisture), b) water required

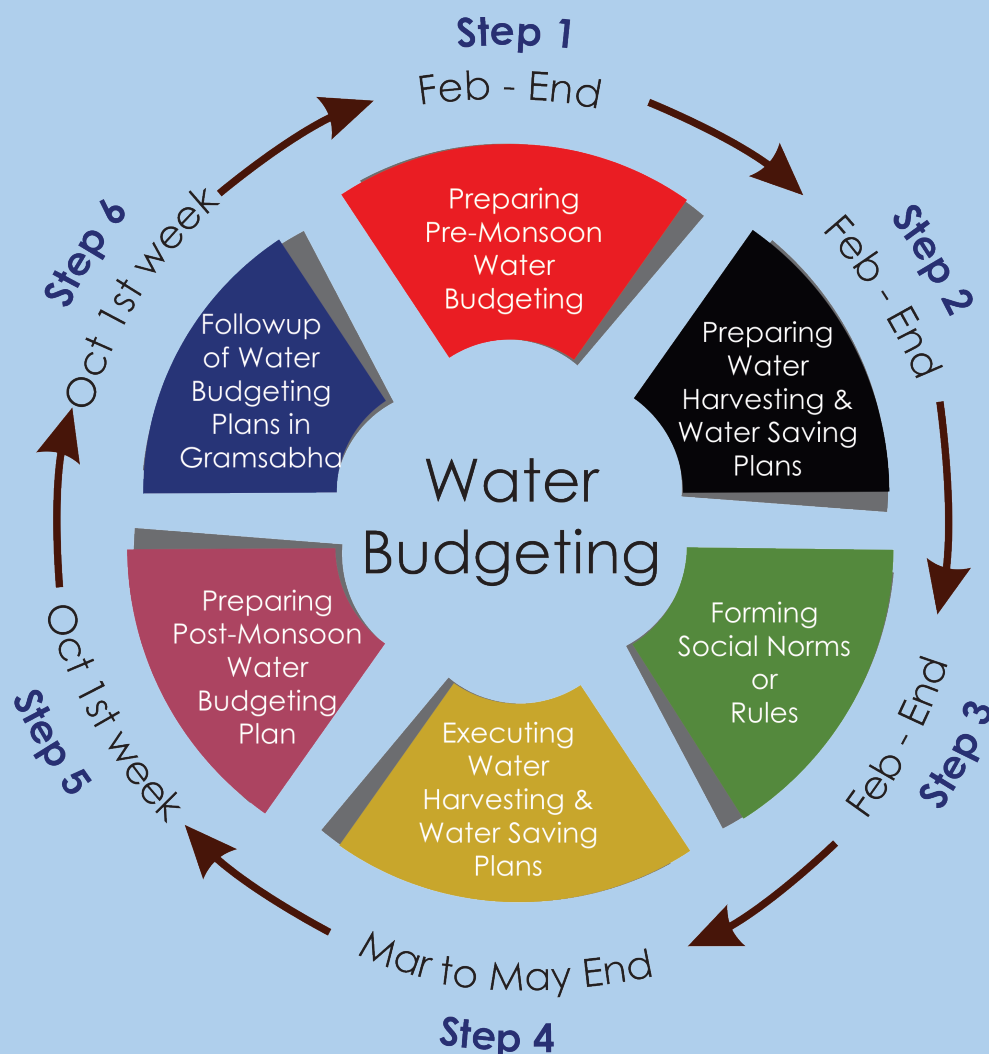
for different needs throughout the year (human, livestock, agriculture), and c) if there is a deficit in amount of available and required water, then preparing action plan to recover this deficit.' In short, water budgeting tool helps communities to understand the amount of water available for different uses and plan their water needs, mainly drinking water and cropping pattern, within available amount of water.

In simple terms, water budget is process of calculating water required for our overall different needs against the total water available to us from different sources. This leads to arrive at decision whether we are in water deficit or surplus condition, providing choices to communities to address the water deficit.

## Major Data Required for Preparing Water Budget

- Total area of watershed and its distribution in terms of forest land, fallow land, area under crops, details of all existing soil and water conservation interventions and structures, cropping pattern and proposed crops by farmers, village population and livestock details etc.
- Rainfall is one of the important inputs for calculating the water budget. For preparing pre-monsoon water budget, average annual rainfall for last five years should be considered whereas for the post monsoon budget, actual rainfall occurred during the monsoon in the villages should be considered.

## The Cycle of Water Budgeting





- **The scale or unit for water budgeting** is the important factor, technically a micro watershed or catchment is the ideal scale for water budgeting, but considering the management and practical implementation opportunities, water budgeting should be calculated at village (administrative boundary) level. However, the areas where village area and watershed area matches is the ideal location for conducting the water budgeting exercise.
- **Water budgeting needs to be done twice in a year**, pre monsoon (for kharif season) and post monsoon (for rabi and summer season).
- **Water budget is not a one time process.** It results in follow-up plans for changing crop pattern, plans for harvesting additional water and for saving water or efficient water-use. To ensure that, the people follow the collectively prepared plans, Grampanchayat should make necessary rules through Gramsabha regarding water-use and crop practices. Above depicted cycle needs to be repeated continuously for few years in the village to gain few tangible results.

## Genesis of Water budgeting tool in WOTR

Since inception in 1993, WOTR applied water budgeting tool in participatory watershed development projects. Later, we found that in villages where watersheds successfully developed, village communities were required to make sensitized to use harvested water in sustainable, more efficient and judicious way to avoid the water scarcity. This forced us to revise our approach and water budgeting tool drastically to provide decision-making support to villagers to ensure that they manage the water resource in more effective manner. Since 2006, we thoroughly modified our water budgeting tool and implementing it in many villages with making relevant modifications with each new learnings. Our learnings showed, unless communities take the self-interest and responsibilities of local water management and they perceive water resource as a 'common property', water budgeting can't get implemented effectively, this triggered us to develop a 'water stewardship approach' and develop a complete set of water supply, demand and governance strategies where water budgeting become one of the important tools. Since last many years, WOTR is providing trainings on water stewardship and water budgeting tool to practitioners and government officials in water and agriculture sector.

### FILMS ON WATER STEWARDSHIP

Sr. No	Film Name	Duration	Year	QR Code	Language
1	Film on Water Stewardship Initiative	7.25 min	Nov-2017	 SCAN ME	English
2	Film by Down to Earth on Water Budgeting	12.52 min	Apr-2018	 SCAN ME	English
3	Film on Facilitating Communities for Responsible Water Management	14.13 min	June-2018	 SCAN ME	English
4	Water Budgeting-Pani ke Niyo-jan ki Kahani	12.18 min	Mar-2019	 SCAN ME	Hindi

### OTHER PUBLICATIONS ON WATER STEWARDSHIP

- D'Souza M., Kale E., Pinjan H. (2019) A Step Towards Quenching Rural India's Thirst: Experiences and Learning from the Water Stewardship Initiatives in Maharashtra
- Kale E., D'Souza M. (2019) Water Stewardship in Rainfed Agrarian Maharashtra. In Suresh Kulkarni (eds) Water Conservation and Saving in Agriculture: Initiatives, Achievements and Challenges in Maharashtra, WRD, Government of Maharashtra.



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