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DROPLET

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MUMBAI CENTER

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from Chairperson Desk

Hello IWWA Mumbai Centre members,

The concept that water as a commodity made its first appearance in 1966, the Royal Society of Canada designated water resources as the main theme for its annual meeting in Sherbrooke, Quebec. The commodification of water refers to the process of transforming water, especially freshwater, from a public good into a tradable commodity also known as an economic good. This transformation introduces water to previously unencumbered market forces in the hope of being managed more efficiently as a resource. The commodification of water has increased significantly during the 20th century in parallel with fears over water scarcity and environmental degradation. Commodification is this transformation from a public good to an economic good that neoliberals claim leads to better management and allocation of a resource, such as water. The creation of water as a private good and a scarce resource enabled a market-based approach to be put forward as the best available solution to protect it. The benefits of commodification are well documented by its neoliberal proponents however criticisms concerning commodification and market environmentalism as a solution to environmental problems are less considered. Commodification necessitates a full recovery price and the removal of cross-subsidies to ensure free market trade. In South Africa this has led to thousands of disconnections from the water supply for those who cannot pay; commentators

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Editor Brief

Population rise, development of new townships, industrialization and change in life style is resulting in continuous increase in water demand for Indian cities. On the other hand, water scarcity is increasing due to limited availability of fresh water sources. In many cities the sources of water are located beyond 50-100 kms and thus require major capital investment to convey the water. The urban population which has experience of good life style and facilities in developed countries have higher expectations from Indian municipalities to meet global standrads of better service. Hence judicious planning of water system & management of assets created is required to

meet the expectations of citizens, manage the resources, operations and maintenance aspects considering delivery standards.

These need to be handled at planning stage itself by introducing the required measurement tools, data acquisition measures leading to predictive and regular maintenance of the structures, plant and equipment.

As the towns and cities are expanding fast, the operation and maintenance of water supply becomes a challenge for the operating agency. The water supply assets, treatment plants, tanks and pumps, operating valves are spread over larger distances, remote locations and storage, operations, distribution control become more complex. Dependency on pump and valve operators makes a supply system inefficient since the considerable time is lost in travelling from valve to valve to open or close it. All operation information does not reach the management in time.

- Er. Dilip Sonwane

Resource Conservation Strategies for Soil and Water Security

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Indian agriculture has entered in a new phase of research and development from the green revolution era of enhancing crop productivity to resolving the new challenges emerged out from green revolution. Issues of resource conservation and maintaining their sustainability is important in view of facing problems of resource degradation along with the fundamental principle of reducing costs of crop production and increasing profitability. Agricultural systems are relying on approaches like sustainable agriculture or conservation agriculture, are not only able to support high productivity, but also preserve biodiversity along with environmental safeguards.

Out of every three hectares of cultivated land in India, nearly two hectares are under the influence of rainfed agriculture. Secondly, intensive cropping systems are heavy feeders and are bound to heavily extract nutrients from the soil. Deteriorating soil quality and the emerging deficiencies in secondary

and micronutrients aside from major nutrients appear to be one of the major factors in the stagnation of fertilizer consumption. Inclusion of site specific water resource conservation, Integrated Nutrient Management, Conservation agriculture and Organic agriculture practices in farming system can be a good option to sustain productivity of crops and declining health of soil.

Rainfed Agriculture

India ranks first among the dryland agricultural countries in terms of both extent and value of produce. Out of about 142 million hectares of cultivated area in India, dryland accounts for 91.0 million hectares (64%) and in the foreseeable future also nearly 60% of our population will still continue to depend on dryland agriculture. Nearly 50 percent of the total rural workforce and 60 percent of cattle heads of the country is located in the rainfed areas. Rainfed areas are highly diverse, ranging from resource-rich areas with good agricultural potential to resource-

poor areas with much more restricted potential. Nutrient Mining in Soils in India is high with net balance on negative side for all three nutrients namely N, P₂O₅ and K₂O.

Considering the erratic climatic conditions, heavy nutrient mining, multi nutrient deficiencies and low crop productivity, comprehensive crop management practices, Site Specific Nutrient Management, Long Term Fertilizer Experiments, Crop residue management, Enhanced tillage practices having greater role in sustained crop production

Management Strategies for Rainfed Agriculture

Technological Interventions for Rainfed Agriculture are - a) Balanced nutrition b) Integrated Nutrient Management c) Integrated Plant Nutrient System d) Site specific Nutrient Management e) Conservation Agriculture f) Crop Residues Management g) Organic Agriculture h) Precision Agriculture i) Soil and Water Conservation

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1) In situ water management

Contour farming is one of the most effective methods for soil and water conservation and thereby increases productivity in dryland areas. Tilling at right angles to the slope of the land, each ridge acts as a small dam. In contour farming, the guidelines are required for ease in cultivation.



Contour cultivation with vegetative hedge

2) Broad Bed and furrow

In black soil areas, a raised land configuration "Broad Bed and furrow" (BBF) system has been found effective for in-situ soil and water conservation and proper drainage. BBF can be successfully used in medium to deep black soil.



Soybean crop on BBF

3) Conservation furrows

Opening of furrows after two crop rows, parallel to the rainfed crop rows and across the prevailing land slope, 3-4 weeks after the germination of the main crop with the help of hoe tying rope to its tine is a simple and very low cost in-situ soil and water conservation practice for rainfed areas.



Conservation furrows

4) Vegetative bunds /interbund hedge

An integrated approach of inter bund treatment proved beneficial which can increase adoption of the system by farmers. Studies were undertaken at Akola on vegetative barrier in banded fields.



Interbund treatment of vetiver hedge

Water Harvesting and recycling

i) Farm Pond

Farm Pond is a water body in lower part of the farm land, which stores excess water during rains and the same is used for giving life saving irrigation. Rainwater collection through farm ponds can effectively be utilized during the off-season for growing cash crops like vegetables, irrigating horticulture crops, providing supplemental irrigation to the standing crops at a critical growth stage.



Farm pond

Concluding Remark

The soil and water management are the key factor in sustaining crop production and soil health in rainfed agriculture. Adoption of resource conservation technologies along with conventional practices is the need of hour to achieve targeted goal of food demand as the world is shifting emphasis from the traditional technologies in agriculture to a wider spectrum through information technology, genetic engineering, climate data base management and land informatics through remote sensing. Therefore, considering soil and water security, the comprehensive approach is to be followed.

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Soil and Water Management Practices

a) Automation helps with the best solution for management of water assets and thus to provide better service to the community. The essential advantages are:

b) The availability of information like water level, quantity in every tank distributing water to consumers at central location,

c) The automatic control of pumps and valves based on level in a tank at local level and all the data being available at a central location,

d) If a pump has not been operated when due, alarms are generated at central location

e) Over-riding control at Central location, and

f) Consumption pattern based on data received.

The automation, remote monitoring and control systems have been implemented in major Indian cities like Bengaluru, Mumbai, Delhi, Jaipur and Internationally smart cities like Singapore, Barcelona, Yokohama and Cannes.

Managing Committee Meeting

The 7th Managing Committee Meeting of IWWA Mumbai Centre was held on Friday, Sept. 23rd, 2022 at 5.15 pm at IWWA (HQ) Office, MCGM Compound, Pipe line Road, Vakola, Santacruz (East), Mumbai in physical mode.



Engineers Day Celebration

The Indian Water Works Association, Mumbai center has celebrated Engineers Day to commemorate the birth anniversary (15th September) of the greatest Indian Engineer Bharat Ratna Shri Mokshagundam Visvesvaraya as Engineer's Day. On this occasion Er Ganla, Er Wadhavane sir, Chairperson Er Maniessa Palande, Dr. Mukadam, Mhetre spoke and about the life of Shri Mokshagundam Visvesvaraya. Five students from Saraswati College of Engineering attended to represent youth forum of centre.



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from Chairperson Desk

fear that this has harmed the health of the nation's people and decreased social equality further.

In India, During the past decade and half India has been witnessing measures to reform the water sector based on the financial sustainability model put forward by the international institutions based on principles like full cost recovery, rationalisation of water tariffs, privatisation, and public private partnerships across urban, rural as well as agricultural sub-sectors. The move is towards privatisation, commercialisation, and commodification of water sector. These efforts to privatise water services have been undertaken through various international institutions like World Bank, Asian Development Bank (ADB) and International Finance Corporation (IFC) funded projects, national programs like Jawaharlal Nehru National Urban Renewal Mission (JnNURM), Urban Infrastructure Development Scheme in Small and Medium Towns (UIDSSMT) and now under the SMART city initiative and the AMRUT plan for urban development. Where private participation of urban services is envisaged, and user costs will be required for covering the

expenses of such services including domestic water supplies. The latest momentum is Jal Jeevan Mission.

Under these schemes several towns and cities across the country have witnessed privatisation measures being implemented despite people's opposition. We have also seen earlier that in some places these projects were halted due to immense public pressure like in Delhi, Mumbai, Bangalore, Latur, Mysore among others. However, despite these setbacks the steps to privatise continue and during this period we have witnessed water services being handed over/ proposed to private control in places like Nagpur, Hubli-Dharwad, Khandwa, Tiruppur, Shivpuri, Patna, Guwahati, Naya Raipur, Mangalore, Kolkata, Ludhiana and Dewas.

On the outset of these finding and also due to capital intensive funding with thrust on infrastructure creation and likely focus on sustainability / maintenance / operations being strained, Commodification of water in India is still a unsolved issues, need more brainstorming, far reaching and all-encompassing approaches.

- Er. Maniessa Palande