

## BACK TO BASICS

**ALTERNATIVES FOR INDIAN IRRIGATION**

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THE COLONIAL LEGACY HAS been haunting India even sixty years after independence. The British had cunningly devised the PWD and finance codes for all construction activities for Indians to instil a sense of guilt, besides sapping national pride and integrity. Yet, none of these basic working rules have been altered to adjust to an independent nation! Possibly the Indian rulers want to continue in a neo-colonial, master-servant mode!

The rules call for multiple quotations for all kinds of works; selection of the lowest bidder; provisions for negotiations and flexibility of project budget. Usually, there is a syndication of intending contractors for sharing the spoils of the construction bonanza! Exaggerated muster rolls for hiring work charged labourers for earthwork are highly lucrative and dishonest practices, due to the nexus between field supervisors and contractors. There are long delays in payment due to endless procedural steps of the finance code, so that contractors keep margins for paying commissions to suppliers and lower level functionaries, escalating the project budget. The budget of the project is linked to the creation of divisions and circles for executing work. Therefore, engineering departments are interested in inflating project budgets! All public works, including infrastructure and water resources development are vested to such agencies.

Jawaharlal Nehru's anti-colonial ideology supporting large dams as the 'temples of modern India' was possibly due to his blind faith in the erroneous Soviet models that which have been retrospectively realised to have caused immense ecological damage to the USSR. In all fairness, in the decades of the mid-nineties, there was no other irrigation alternative known. It is something else that the British Raj had introduced specific elements into the working system that trigger corrupt practices! The Indian engineering fraternity jumped at the opportunity provided! Huge irrigation projects form the core of India's construction activity. Initially, it was for food self-sufficiency that such colossal multipurpose projects were planned. However, this cover has been blown by the well stacked food corporation warehouses becoming feasts for rodents and other pests!

In the nineteen seventies, the Report of the Irrigation Commission exposed the technical deficiency of mega-irrigation projects with the designs technically incompatible with the inherent nature of the monsoons. In India, the bulk of the precipitation occurs in about two months, leaving the rest of the year 'high and dry'-causing both floods and droughts.

The Commission also pointed out that the reservoirs remain underutilised due to premature silting. In August 2006, Central Water Commission reported that States with the largest number of mega-dams suffered severest floods due to drastic live storage reduction. Narmada, Tapti,

Ukiah, Nagarjunasagar, Mahi reservoirs are examples from Andhra, Rajasthan, Madhya Pradesh and Gujarat.

This strategy of gigantism has led to a deep socio-economic divide within the rural population. The emergence of a small group of Indian kulaks with huge land holdings has enabled them to accrue affluence and influence. Hand in gloves with mega-contractors, this lobby is controlling the national irrigation policy, irrespective of the governing political formation. Land reforms with elected *Panchayats*—the instrument of positive change—remain an unfulfilled dream, except in just a few states!

Each micro-unit needs to be fine tuned for optimal land-use and irrigation due to immense micro-level variations in terrain features. Internationally recognised, uncomplicated and easily determined—*Land Capability-cum-Irrigability* would help. Despite the colossal technical Agriculture-Irrigation departmental infrastructure, drawn largely from the educated urban classes without any field experience such surveys have been avoided -lest the truth about local land-water and farming conditions is revealed. Large projects, designed for centralised water distribution, are incapable of supplying timely and required water doses to the various units in the command area. Therefore, selective nutrient depletion ensues due to an unavoidable and repeated cropping of wheat and/paddy.

Exotic, high-yielding and hybrid varieties of cultivars that are unable to survive without excessive water and toxic agro-chemicals are used in massive irrigation projects. Inevitably, food chain toxicity, with irreversible land degradation ensues. Major irrigation projects almost totally depend on high external inputs of such agrochemicals, cement, steel, and machinery. The Transnational Agribusiness Corporations, and their local associates, supplying these items extract the lion's share of benefits.

Paradoxically, the Indian agricultural system—developed in the name of 'food scarcity'—is now mortally infected with the 'Green Revolution' virus initiated by Dr M S Swaminathan. In 2002, even he has thus confessed in the lecture- 'Food for All : Pathway to Sustainable development' at CESS, Trivandrum :

"...The growing damage to the ecological foundations essential for sustainable food security, such as land, water, biodiversity, forests, and the atmosphere, is leading to stagnation in yield in Green Revolution areas... The indicators used in measuring sustainability of food security are: land degradation and salinisation, extent of forest cover, ground water depletion, and the nature of crop rotation. In all these parameters, the Punjab and Haryana occupy a low position. The rice-wheat rotation has led to the displacement of grain and fodder legumes capable of enriching soil fertility. What is now happening is best described as a trend towards land and water mining and not sustainable farming...."

Already, two thirds of cultivable lands in India are severely degraded—primarily to satisfy the greed of the unholy nexus earlier indicated. Unless India sensibly alters its irrigation paradigm, it cannot but end-up in the path of irreversible environmental degradation!

About a decade ago, a proposal for a radically different irrigation alternative by the economist, Prof C R Hanumantha Rao, was accepted by Late S R Sankaran and a few other well meaning bureaucrats then holding powerful positions in the central government. This led to the launch of a massive community participative watershed development project, with funds directly sent to local watershed committees by Government of India.

This was a grass-roots level programme conformable with micro-climatic variations and local terrain features, without the compulsions of homogenised farming. The communities draw up farm plans based on their arsenal of traditional knowledge and experience. This opens up vistas for sustainable, organic and innovative farming. More-over, there is hardly any need for external expertise and material for constructing miniscule water harvesting and storage facilities. Commonsense and local terrain familiarity is adequate. The unit cost of irrigation cost is miniscule compared to mega projects!

A redeeming feature of this strategy is its edge-top to valley bottom approach, ensuring soil conservation by runoff-cum-erosion control. This also substantially reduces valley bottom problems of excessive silting and water logging. Locally planned vegetative cover opens the doors for a viable, value added livelihood for the marginalised upper slope zone dwellers. Without external interference, the system is likely to be optimally sustainable; diverse and agriculturally proper.

The tools for rationalisation are simple enough. The process may be initiated with a Land Literacy package to instil confidence in them to (a) articulate their traditional knowledge and practices; (b) enable them to use their own lexicon of terms to identify and actually map their local natural resources cadastral maps so familiar to them; (c) allow them to draw up a plan for tackling degradation and initiating sustainable development; (d) motivate the Panchayati watershed groups to take up components of the action plan. Most importantly, the entire process helps them to free themselves from the stranglehold of locally operating vested interests. After all, it is at the micro level of land use where actual land users can make changes towards a better management paradigm. The rationalisation package should include (i) Use of their traditional wisdom and intimate local knowledge in land use (ii) Gradual switchover to a more organic farming regime including bio pesticides (iii) Reintroduce sensible farm practices like crop rotation, leguminous intercropping, and contour cropping.

Community and civil societal pressure should be exerted on the administration by various means, to provide incentives to the community during the switchover period to sustainable, low input farming by replacing the massive subsidies for undesirable inputs that are environmentally, socially and economically vitiating India.

Global experience endorses that such micro-level cottage farms with its own irrigation source are much more productive, than those within a major irrigation command. Despite its acceptance of the watershed programme by government and its launching in many a state, it was nipped in the bud after a change of government in 1998! To perpetuate its own influence,

the entrenched technocracy is constantly obstructing this strategy to take roots. This programme has not yet been resuscitated in its original format!

India can be rationally subdivided into several agro-climatic zones, each endowed with its 'dominant resource value'. In fact, if this factor is heeded by the policy planners, the country can be developed into highly productive wet agriculture and dry land farming zones. The products would be an array of cereals, dairy products, fish and meat, with ample scope for value addition.

The alarming disparities in the Indian socio-economic conditions have left the overwhelming majority with bare subsistence. The ever widening urban and rural differential, also between the deprived multitudes and the affluent minority, has been aggravated by the onslaught of the global market forces.

Notwithstanding the onslaught of globalisation and the market forces, the late 1980s witnessed the emergence of rural voluntarism with exemplary local initiatives launched by Anupam Mishra, Annasaheb Hazare, Vilasrao Salunke, and Bharat Patankar. Voluntary community efforts like *Pani Panchayats* in Maharashtra ; Tilonia and Alwar in Rajasthan ; demonstrated their social, equitable and sustainable value. It was Rajendra Singh's *Johad* based, Alwar model that compelled policy makers to consider it as a possible development strategy for irrigation. □□□