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# **Does Urbanisation Affect Tank Irrigation Development in Tamil Nadu? A Macro-Level Analysis**

**A. Narayanamoorthy and R. Suresh**

## **ABSTRACT**

*Tank irrigation is an important source of irrigation in India, but its area has been declining over the years. Numerous studies cite variations in rainfall, boom in groundwater irrigation, breakdown of village-level local institutions, encroachment in catchment areas and supply channels, and poor maintenance as the main reasons for decline in tank-irrigated area. In recent years, urban agglomeration that leads to encroachment of tanks has posed a serious threat to tank irrigation. Although urban agglomeration has been addressed in a few studies, it has not been studied taking into account district-level time series data. This study attempts to assess the impact of urbanisation on the number of tanks as well as on the area under tank irrigation in Tamil Nadu taking district-wise data from 1970–71 to 2009–10. Results suggest that there is a considerable reduction in area under tank irrigation in most urbanised districts or districts with urban population above the state's average. More studies that make use of disaggregated data (taluk/block level), however, are needed to validate the results of this study.*

**Keywords:** Irrigation development; India; rainfall; tank irrigation nexus; tank irrigation; urban agglomeration

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# **Reengineering the Irrigation Systems of Kerala: The Case for Designing Lift Irrigation Schemes as Multiple-Use Systems**

**P.K. Viswanathan**

## **ABSTRACT**

*A critical review of utilisation of water resources in Kerala reveals that despite huge investments made during the plan periods over time, they have not been managed to perform to their irrigation potential. This paper undertakes a critical review and assessment of the performance of irrigation systems in Kerala using a comparative perspective. While making a strong case for redesigning irrigation systems in the state, the paper discusses the policy and institutional imperatives needed for revamping irrigation systems as multiple-use systems in terms of (a) irrigation provision, (b) flood management, (c) drinking water security for human and animals and (d) provision of ecological and environmental services. It concludes that given the specific geographical settings of the state, more emphasis should be given for developing and strengthening small-scale irrigation systems, especially lift irrigation systems, because of their multiple benefits, and economic feasibility and accessibility for small and marginal farm holdings.*

**Keywords:** Kerala, irrigation systems, lift irrigation systems, multiple-use systems

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# **Factors Influencing Reliability of Groundwater Markets in Less Water Scarce Regions: A Case of Assam in Eastern India**

**Jitu Tamuli and Mrinal Kanti Dutta**

## **ABSTRACT**

*Expansion of groundwater-based irrigation has resulted in the emergence of institutions like groundwater markets in some states of India. The size and growth of these markets depend upon the status of agricultural development, agro-climatic conditions and level of groundwater development. Unlike many states in India, Assam has abundant groundwater reserves but the emergence of informal groundwater markets is noticed in some parts of the state. These markets have ensured access to water to those farmers with limited capability to invest in technologies to extract groundwater. Since the market is residual in nature, sellers resort to selling of excess water only after meeting their own requirements, resulting in inadequate supply of water to buyers. Using field data from two districts of the state and with the help of logistic regression, the study examines factors influencing reliability of water markets from buyers' perspectives. The study finds that the quantity of groundwater purchased, education of buyers, tenancy and the types of fuel used to operate pumpsets are some significant determinants of reliability of groundwater markets.*

**Keywords:** Reliability, groundwater markets, pumpsets, irrigated area, logistic regression, Assam

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# **Valuing Nature: Implications for Local Resource Users in the Case of Chamba, Himachal Pradesh, India**

**S. Krithi**

## **ABSTRACT**

*This paper discusses the consequences of the proposed system of compensation to forest-dependent local communities when forestland is diverted for other uses. It focuses mainly on the method of calculation of net present value of forests proposed in the Compensatory Afforestation Fund Act, 2016, in India. This case study of forest-dependent communities in rural Chamba district in the Himalayan foothills of northern India highlights the present pattern of local communities' dependence on forest goods. The income derived from these goods by local communities is calculated using the method proposed by the Professor Kanchan Chopra Committee. A critical appraisal is made of different theoretical models and the manner in which they calculate income and what the consequences for local resource users would be. The present study finds that not only does the above Act remove rights of the local community directly but it also disempowers the community because of the way the calculation of net present value is calculated. The paper concludes by proposing basic requirements of any form of compensation, which will be a Pareto improvement for local forest communities.*

**Keywords:** Forests; environment; Chamba; livelihood; valuation; compensation

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# Genuine Savings and Sustainable Development

K. Dhananjaya and Krishna Raj

## ABSTRACT

*It is increasingly becoming clear that growth models that relied on the growth–environment trade-off are not sustainable. Countries, in pursuit of increasing their GDP, have ignored the negative externalities of growth, which could seriously threaten the survival of future generations. Two kinds of damage are caused by unsustainable growth. First, the productive base, particularly natural capital like forests, minerals and energy, are fast depleting. Second, environmental pollution and climate change caused by excessive CO<sub>2</sub> emissions are threatening human lives by leading to deteriorating health conditions and impoverishing economies. For nations, sustainable development has assumed importance in light of these concerns. This study attempts to assess the sustainability of economic growth of select countries using the genuine saving rate (GSR) approach advocated by the World Bank. The findings of the study show that developed countries achieve sustainable growth by reducing the extent of negative externalities caused by development, whereas developing countries generate a higher savings rate to compensate for negative externalities in their pursuit of sustainable growth.*

**Keywords:** Sustainable development, natural capital, genuine saving rate, negative externalities.