

Inter-relating resource management issues

Research funded under the DFID FRP

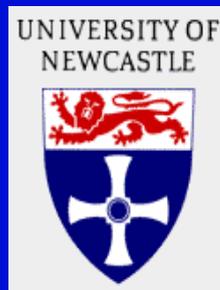
Research Cluster on Forests and Water

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Watershed Development Programme Philosophy

Focus on:

- ◆ Improving water Supply (water resources)
rather than
- ◆ Managing water Demand.

Typical Supply side measures:

- ◆ Engineering interventions: Soil water conservation measures, check dams , bunding etc.
- ◆ Forestry programmes which are expected to regulate or even increase flows.

Watershed Development Programme Philosophy

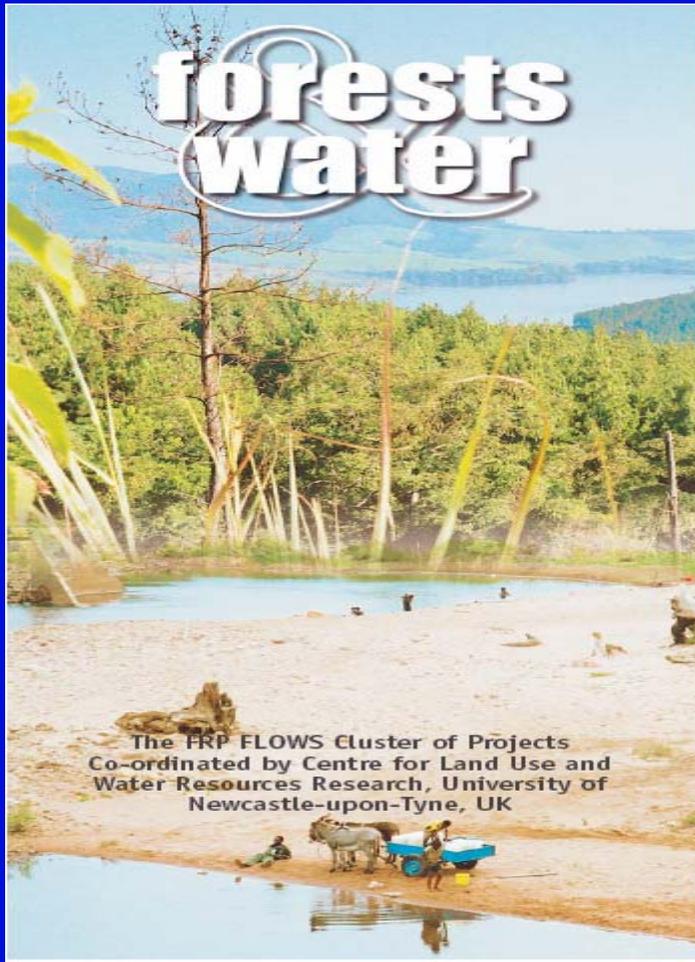
Is this Philosophy correct?

- ◆ To what extent can we augment water supply ?
- ◆ Should we put more effort into managing water demand?

Do supply side measures always work?

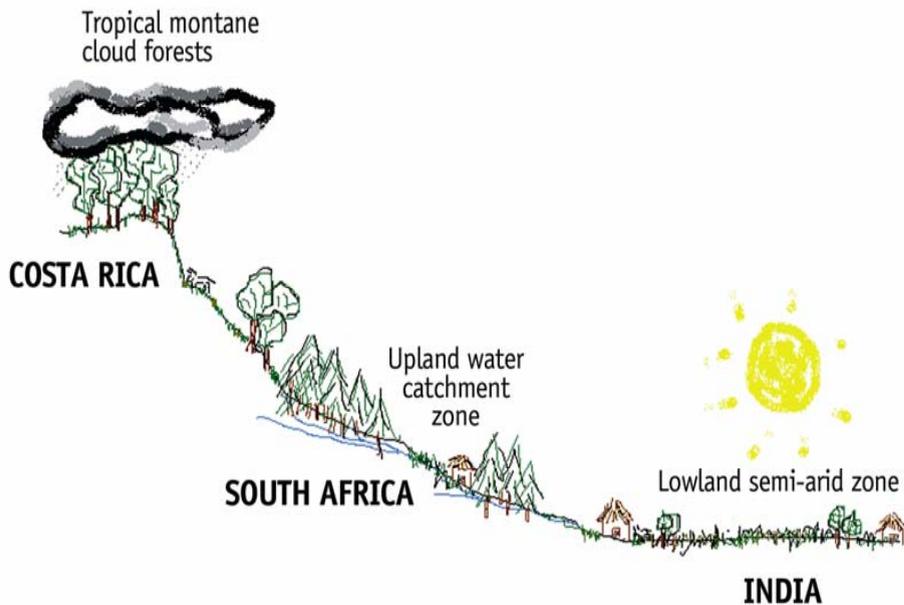
- ◆ Batchelor et al (2000) show that when a catchment reaches “closure” little benefit will be gained through further engineering interventions, e.g. Soil water conservation measures, check dams , bunding etc.
- ◆ Research worldwide shows that forestry programmes generally DO NOT regulate or increase flows. – FRP Research

DFID Funded research on Forests and Water



- ◆ Recognises differences in the Public and Science perceptions about the role of forests and water
- ◆ FRP research worldwide aims to better understand forest and water impacts:
 - Biophysical
 - Socio-economic
 - Bringing together “science” and “public” perceptions –Connecting science with policy
 - Improve livelihoods

DFID Funded research on Forests and Water



- ◆ Research is being carried out along a notional altitudinal transect from high altitude cloud forest in Costa Rica through the intermediate water catchment zone in South Africa to the lowland semi-arid zone forests in India.
- ◆ Biophysical focus: Impact of forests on dry season flows

Impact of forests on water resources in the semi-arid zone, India

Research will focus on:

- ◆ **Biophysical Research: Modelling, and field calibration**, of the influence of forests on the flow regime (particularly dry season flows) in dry zone conditions using data from existing catchments.
- ◆ **Socioeconomic research 1: improving understanding of Institutional Perceptions and Constraints** which have previously underpinned forest and water policy - enabling the move to more science based policy.
 - Policy Analysis set within a Livelihoods Framework-impacts on poor
 - Regulatory and monitoring framework ?
- ◆ **Socioeconomic research 2: Develop Dissemination Tools** for communicating the “science perception” and impacts of catchment decision making to stakeholder organisations and local communities- involves development of web-based software linking GIS and hydrological models.



Impact of forests on water resources in the semi-arid zone, India

“Perceptions” component important because:

- ◆ Suspicion that large spending of development funds in India is based on erroneous belief that tree planting will increase groundwater recharge.
- ◆ Equally – if not more serious– concern that focus on forestry programmes for improving water resources diverts attention from urgent need for demand-management of groundwater abstraction.
- ◆ Groundwater table often >100 m , hand-pumps not working, villagers buy water from tankers, pumping groundwater accounts for major proportion of all the electricity generated in some states.



Expected Research Outcomes

- ◆ Improved Biophysical Understanding of the impact of forests on water resources in dry zone regions which is....

communicated and disseminated to government, NGO, and International development organisations.

- ◆ Improved understanding of the past “Institutional Perceptions” which have previously underpinned forest and water policy - enabling the move to a more science based policy.

- ◆ Improved Dissemination Tools for communicating the “science perception” and impacts of catchment decision making to stakeholder organisations and local communities.

All leading to improved land and water policies which ultimately lead to improved livelihoods of poor people.



Some Pertinent Questions following KAWAD

- ◆ **How to arrive at alternative scenarios ?**
 - A key issue to participation
 - ◆ **How to carryout impact assessment ?**
 - Of structural as well as non-structural measures
 - ◆ **How to check the sustainability ?**
 - That is not confined to the local level only
 - ◆ **What about the replication and creation of a framework ?**
 - That can be sustainable and can take on new knowledge
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