

13th International Riversymposium

Perth - Australia 11 - 14 October 2010



Innovative Strategy in Participatory Water Management: A Case of Bulk Water Allocation in Sri Lanka

M.M.M. Aheeyar

Hector Kobbekaduwa Agrarian Research and Training Institute
Colombo, Sri Lanka

Introduction

- River Mahaweli – longest river, covers 1/6th of landmass
- Mahaweli development programme formulated to achieve multiple objectives
 - Provide irrigation for 360,000 farm families
 - Settlement of 350,000 farm families
 - Electricity of over 500MW
 - Employment for over 1 million
 - Regional development – through social and physical infrastructure

- Accelerated Mahaweli programme developed various systems A, B, C, D, G, H
- Each system consists of different blocks
- Each block has around 2,000ha and 2,000 farm families
- Each block divided into several units – 200-265ha (200-250 families)
- Network of canal systems – MC, BC, DC, FC
- Field Canals (FC) has 10-15ha of irrigated area

- Mahaweli – H is the oldest system developed in 1970's
- Total command area of the system is 31,500ha
- Wet season – 100% of the area cultivated mainly with water intensive rice crop
- Dry season – around 50% of total area cultivated mainly mixed crops
- Water scarcity in system H is high due to;
 - limited capacity of storage tank compare to large extent to be cultivated
 - limited diversion of water due to technical reason
 - well rain RBE soil for over 60% area
- Therefore, water management is critically important.

Bulk Water Allocation Programme (BWA)

- PIM – considered as the tool to improve irrigation efficiency and sustainability
- Past experiences raised doubt on effectiveness of PIM
- MRRP implemented comprehensive approach in rehabilitation which is leading to IMT;
 - Institutional development
 - Rehabilitation
 - Sustainable O&M
 - Water management-BWA
- Pilot project started in 2001, later expended to entire system H

Objectives of the Paper

To assess the application of BWA to understand the outcomes and impact for dissemination in wider areas

Salient Features of BWA

- BWA – To achieve optimum water use and irrigation system efficiency through,
 - farmer empowerment
 - better water management
 - reduction of government involvement
- Strategy to reach objectives of IMT
- The quantity of water to be issued is fixed
→ called as water quota
- Quota is based on integrated seasonal plan
- Once quota is determined and informed to DCO's, farmers have legal right on their quota

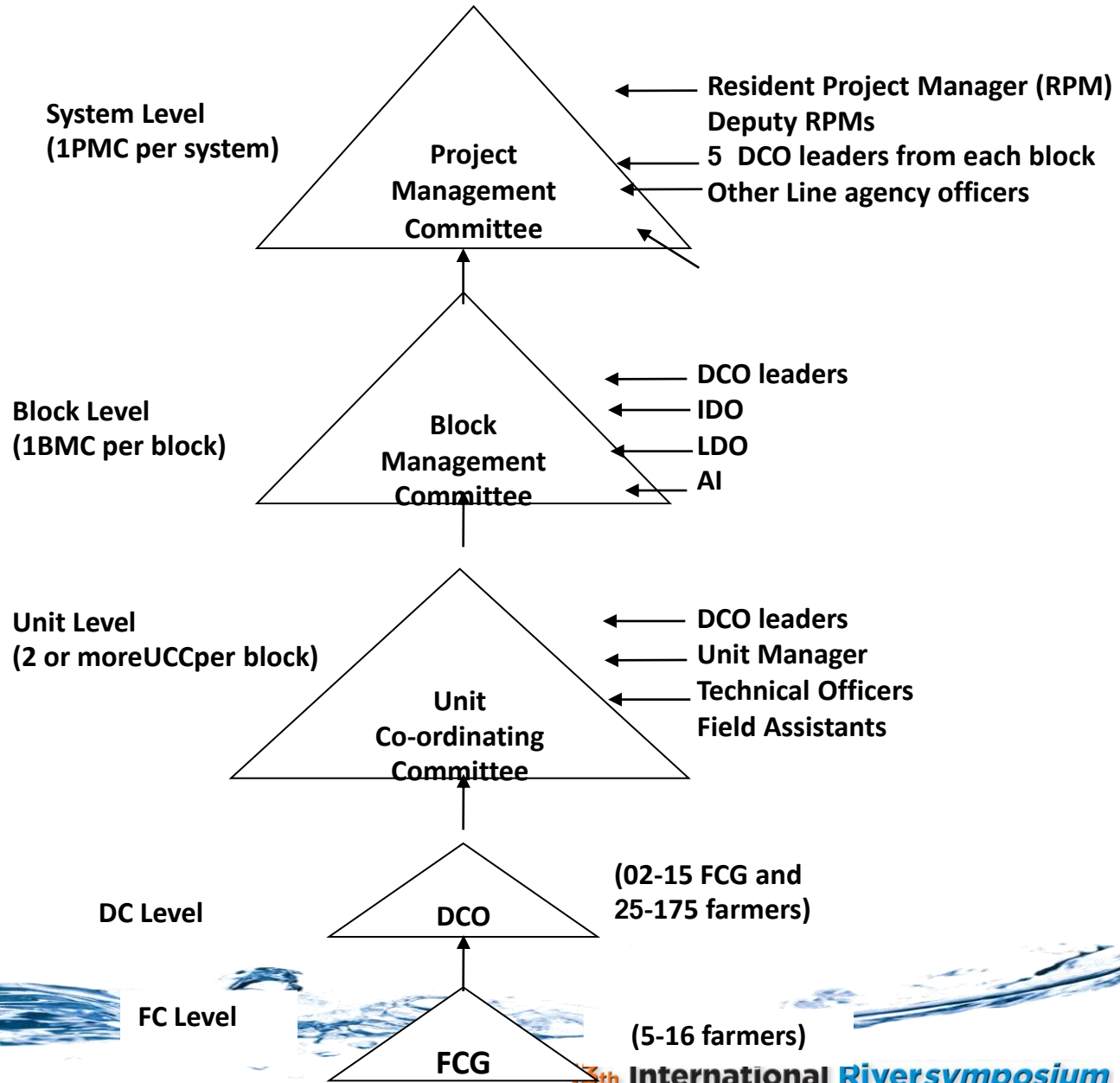
- Farmers are obliged to participate and contribute for water management
- Farmers to pay a O&M fee of Rs.250/ha/season
- Farmers have to manage the crop with the quota and irrigation agency is responsible for delivering

Technical and Institutional tools for BWA

1. Institutional Development

Aimed to create conducive environment to both officers and farmers for sustainable O&M

Institutional Arrangement at Mahaweli System H



2. Rehabilitation of Irrigation System

- People centered development approach
 - Rehabilitation prior to transfer of management
 - Sequential steps followed
- I. Awareness creation and capacity building on
- Joint construction
 - Canal rehabilitation
 - O&M
 - Water management
 - Flow measurement

II. Soliciting farmer participation

- Participation and contribution from planning stage
- Allow to express views and incorporated knowledge and wisdom of the farmers
- DCO's mobilized to undertake rehabilitation contracts
- Ensured sustainable management

III. Water resource management

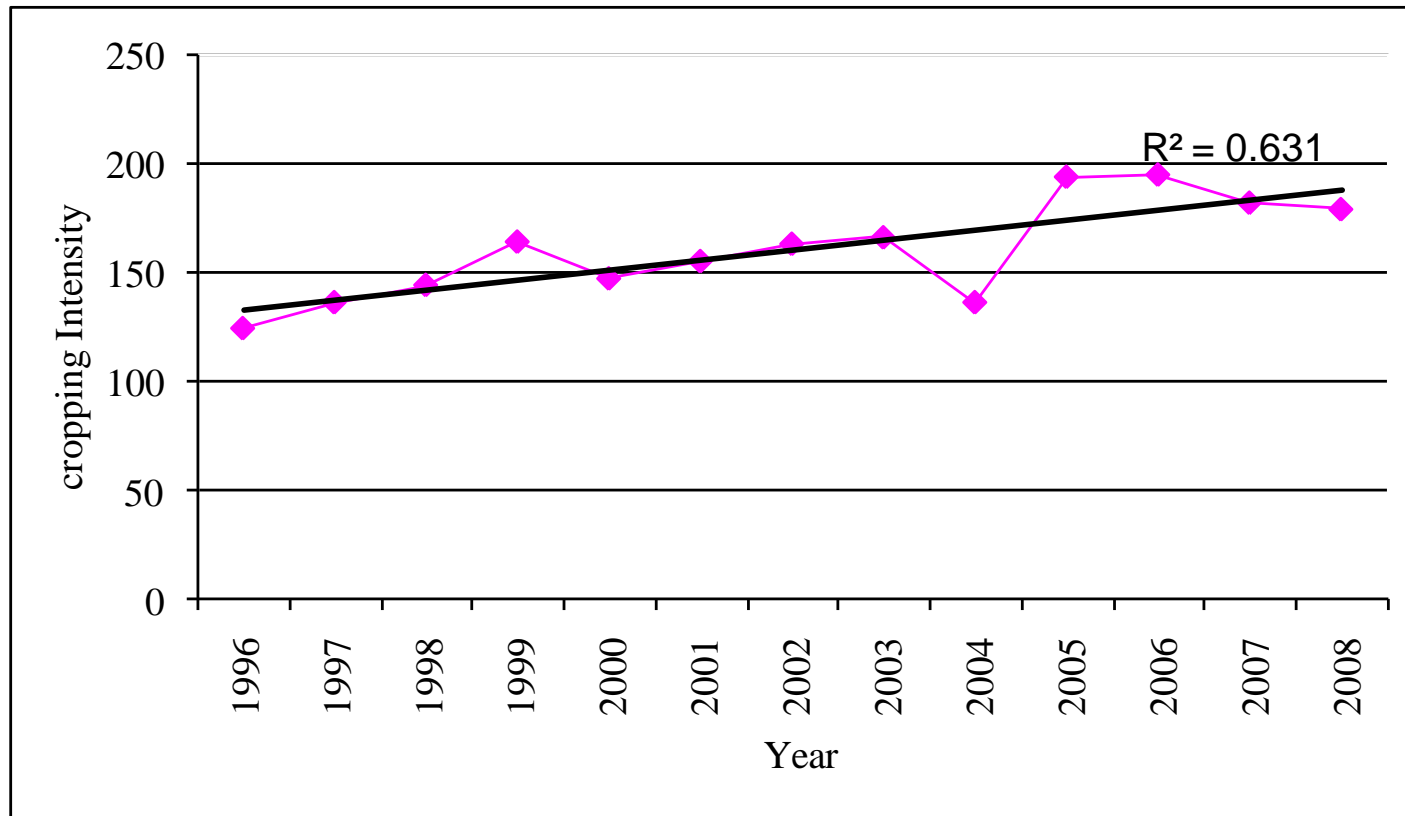
- IMT and BWA are the main tools used
- Philosophy behind BWA is to create volumetric impression among farmers on amount of water used
- Helped to change attitudes and developing good culture in water use
- Transparency in water allocation and flexibility in using water quota

IV. Commercialization of small farm agriculture

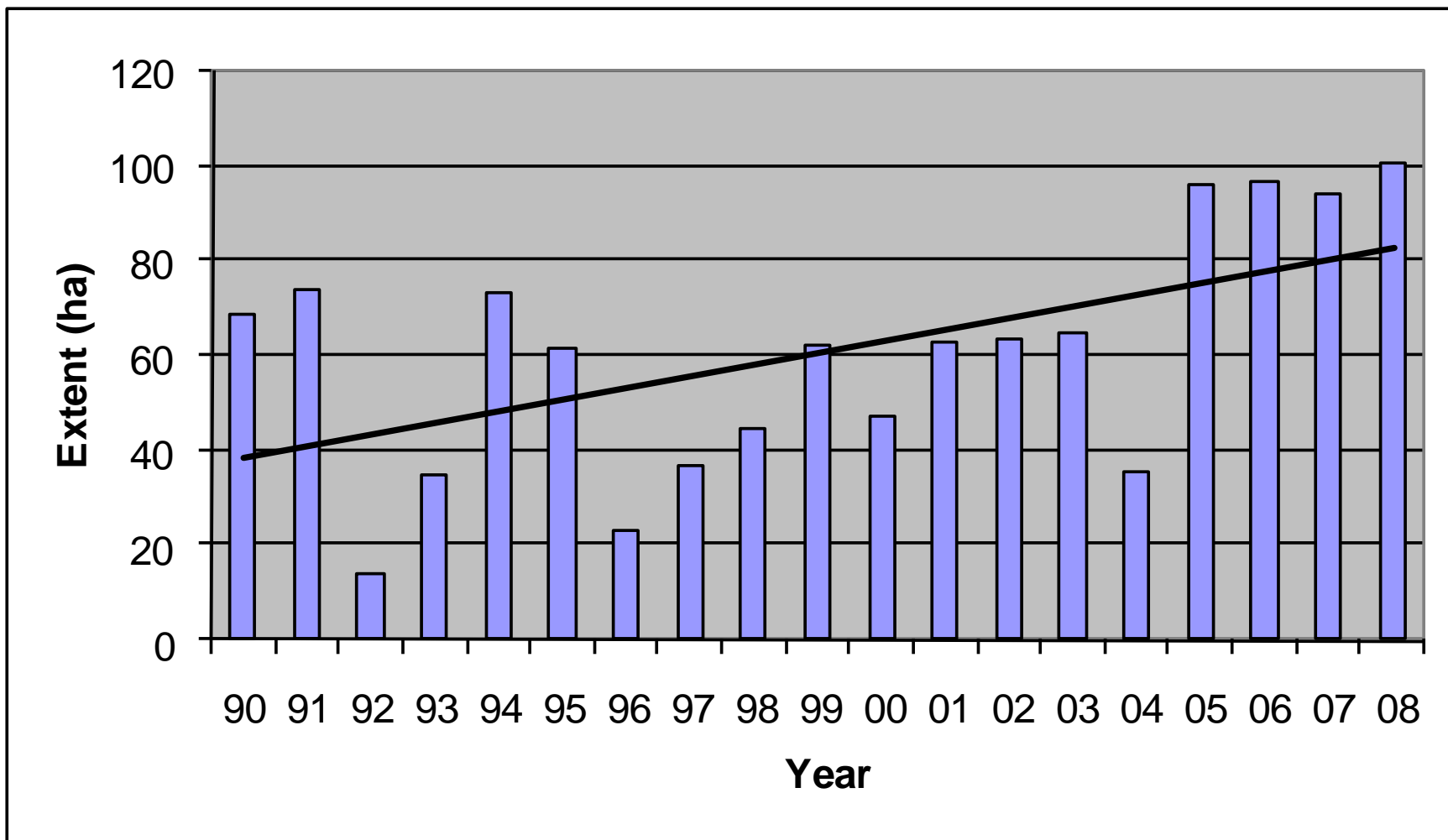
- Contribution of cash and kind is important for sustainable O&M → depend on farmers income
- Crop diversification
- Private sector participation – contract farming and forward purchase agreement

Outcomes and Impacts

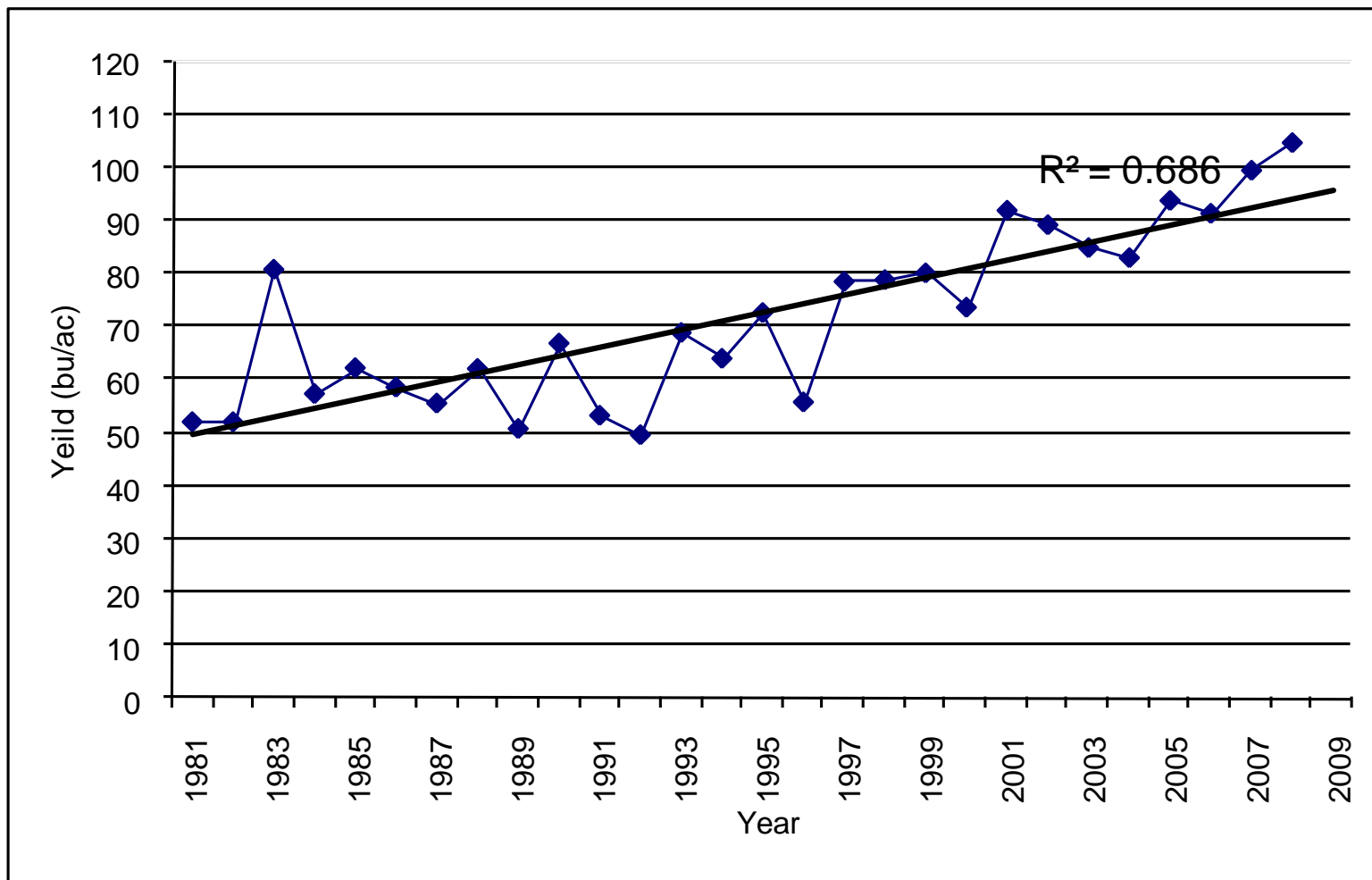
(1) Agricultural performance



Changes in Cropping Intensity in Mahaweli H Area



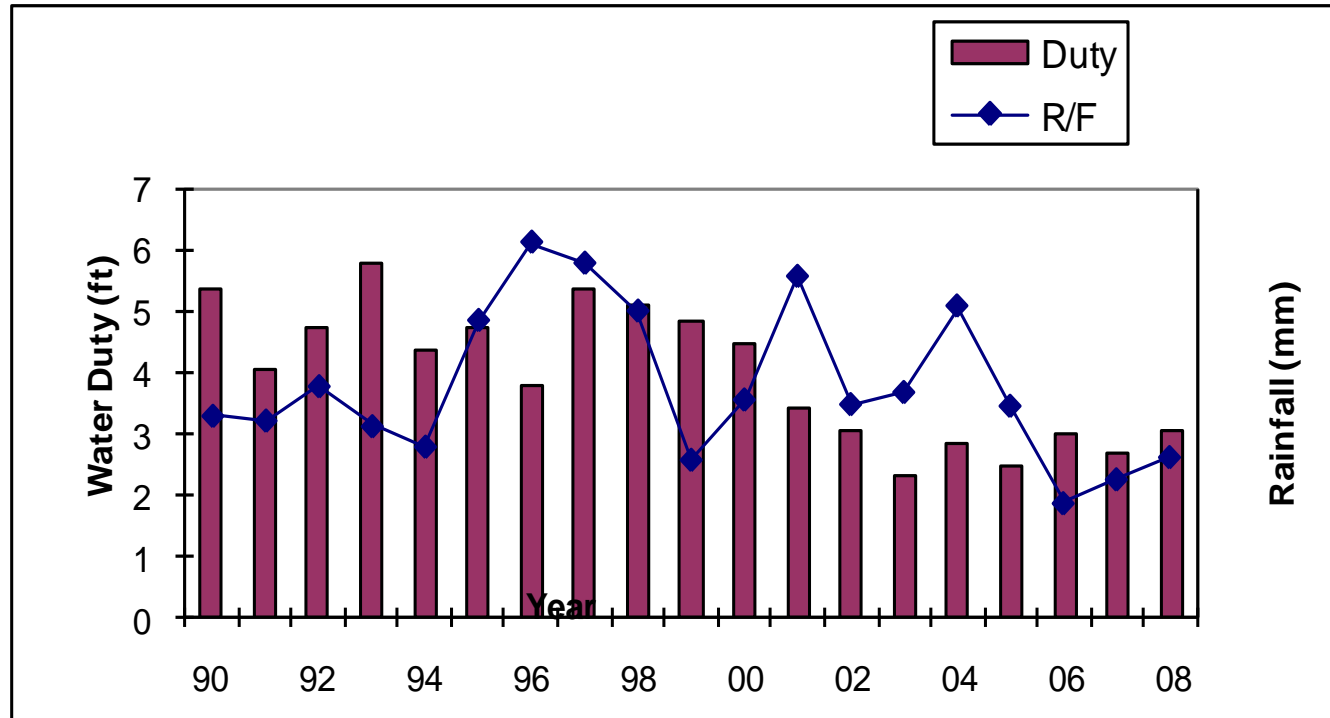
Percentage of Land Extent Cultivated in Past Dry Seasons



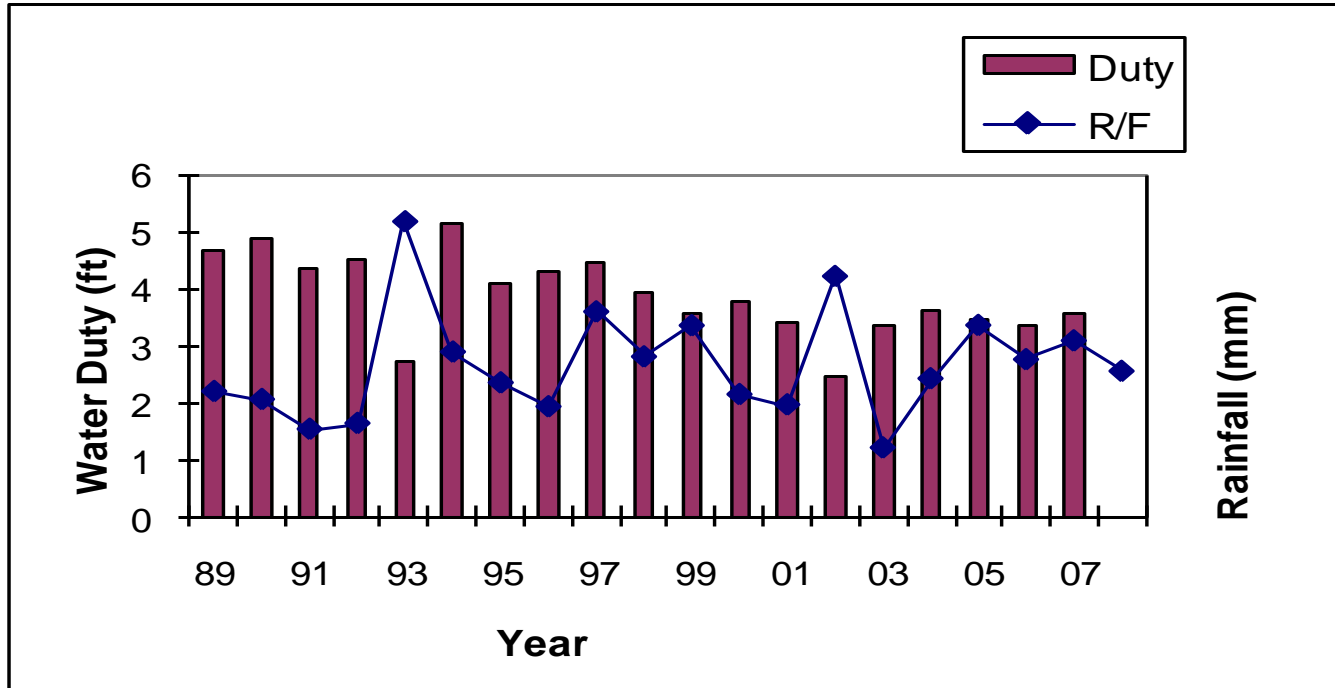
Changes in Rice Yield in Mahaweli H – dry Seasons

(2) Water supply performance

Gross Water Duty in Dry Seasons



Gross Water Duty in wet Seasons



Relative Irrigation Supply (RIS)

- RIS is the ratio of the actual irrigation supply to the panned irrigation demand
- Values are equal or close to 1
- Flexibility in irrigation issues allows farmers to modify rotational water quantity and rotation intervals to match the real field situation

Beneficiary Perceptions on BWA

- Majority of the farmers are happy about timeliness and reliability of water issues
- Farmers could planned the cropping system in advance and under take the activities
- Awareness on effective use of water and the authority for farmers in water management
- Malpractices like destroying or damaging canal structures to get additional water reduced drastically

Concluding Remarks

- BWA is build within the framework of PIM, participation, co-operation and contribution of stakeholders are vital
- The parties should be willing to listen and respect the opinion of each other
- Transparent and socially acceptable maintenance and emergency repair arrangements are essential which need sufficient budgetary allocation from government

- IMT should widen the focus beyond mere cost recovery
- Periodic programmes to enhance skills and capacity of DCO's and maintain enthusiasm of officers are important
- Feasibility of duplication

Thank You !!