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IIMI INTERNATIONAL IRRIGATION MANAGEMENT INSTITUTE

INTER OFFICE MEMORANDUM

To: Charles Abernethy

From: Zenete Peixoto Franca

Date: February 26, 1991

Copy: R Lenton
H Sally
Franz Heim

Subject: Summarized Report on DSE/IIMI Workshop on New Trends and Policies in Irrigation Management

INTRODUCTION

An MOU signed, between International Irrigation Management Institute (IIMI) and the German Foundation for International Development Food and Agriculture Development Center (DSE/ZEL) on 18 May 1990, to intensify both parties' collaboration on designing and conducting dialogue and training measures related to innovative irrigation system management in South-East countries, drawing on their respective areas of comparative advantage to enhance and strengthen the efforts of both.

One of the first events of the program was a Joint DSE/IIMI Workshop on New Trends and Policies in Irrigation Management, held during 15 - 18 November 1990, at Hotel Taj Samudra, Colombo, Sri Lanka (Annex 1). A small group of senior policy makers from Indonesia, the Philippines, Thailand and Malaysia participated in this workshop. (Annex 2)

This workshop included a field trip to Polonnaruwa for the participants to be exposed to the pragmatic approach to rehabilitation under the Irrigation Systems Management Project.

OBJECTIVES OF THE WORKSHOP AND DEVELOPMENT

The aim of this workshop was to provide an opportunity for policymakers (i) to examine the experiences gained in the region, and (ii) to discuss with their colleagues from other countries policies and trends in irrigated agriculture.

The overall objectives were to -

(i) exchange experiences of irrigation development in each country with special reference to;

(a) the role of the water users and the respective policies,
(b) the cost recovery policies, and
(c) the legal and institutional arrangements.

(ii) sensitize on the importance of the contingency approach management concepts in irrigation;

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(iii) sensitize on the benefits of performance M & E, and on the value of sustainability in irrigation; and

(iv) consider policy implications which may enhance further development of irrigated agriculture.

15 November 1990

The first day of the workshop started with welcome words from Mr Franz Heim (DSE) and Mr Charles Abernethy (Director of Programs, IIMI). Following this, an interactive exercise was carried out by Dr Zenete Peixoto Franca, IIMI Training Specialist, to get acquainted with the participants.

After the Tea-break, a presentation on "The Systems Approach and its Implications on Management" was made by Dr Rudolph Cleveringa (Consultant, DSE).

The main objective of this presentation was to offer a concept of Irrigation System Management based on recent thoughts and approaches developed in business and administration to serve as reference framework throughout the workshop. (Annex 3)

After lunch, Dr Douglas Merrey (Head, Sri Lanka Field Operation, IIMI) and Dr Rudolph Cleveringa made a presentation on "Trends and Policies in Irrigation Management" (Annex 4). Purpose of this presentation was to set scene for discussions in small groups on what is needed to create conditions conducive to demand-driven irrigated agriculture. The leading questions, during this discussion, were -

(a) What are the conditions favoring and limiting, shifting irrigated agriculture to a demand-driven system?; (b) Using some data from Southeast Asia supplement by Sri Lanka data to outline trends, evolution of irrigated agriculture sector; and (c) Looking at some broad trends, details vary among countries and even within countries, hoping to be provocative.

After the tea break, presentation of results of small group discussions in the plenary was made. As an adjourning activity for the day, a reception was held by the Germany Embassy for the participants of the workshop.

16 November 1990

The second day's activities started with a presentation on "Sustainability and Performance in Irrigation" by Mr Charles Abernethy (Annex 5). This was clarified and participants had group discussions on (a) threats to sustainability in irrigation, and (b) criteria and procedures for M & E of sustainability in irrigation. Following this, another presentation was made by Mr N G R de Silva on "Policy Arrangement in Irrigation in Sri Lanka" (Annex 6).

CONCLUSIONS

In general, this first workshop of the DSE/IIMI Collaborative Program, was geared towards the final results we anticipate, e.g. the role of perspectives IIMI/DSE see for improved system performance through the complementary management innovations and practices.

The participants had lengthy discussions on sustainability and performance in irrigation. They discussed the major avenues through which system sustainability can be threatened. Some of the major sources of these threats were Physically through siltation, water-logging, salinization and loss of fertility; socio-economically through institutional weaknesses, economic competition, water-related diseases and labor deficiencies; financially through operating costs, inadequate funding mechanisms (fee collection, etc.), and inadequate incentives; and biological/environmentally, weed growth, effluent pollution and downstream hydrologic changes. (Annex 9)

In Malaysia, with regard to irrigation management agencies, the department is attempting to reorganize itself and adopt modern management practices within the context of continuing as a line agency, and minimal attempts to experiment with farmer involvement.

Thailand seems to be still experimenting with various approaches to farmers, with perhaps less attention than Malaysia to modernizing its operational mode.

Indonesia seems to be turning over smaller systems to reduce its O & M cost burdens, with minimal attempts to modernize its operational mode.

In devolving authority to farmers organizations combined with financial autonomous agency able to work in entrepreneurial management mode, the Philippines has gone furthest in both devolving authority to farmers organizations, and reforming the agency to be more client-oriented. Considerable research confirms what Filipinos already know: Key reform in national irrigation administration was to make it financially autonomous and responsible.

Sri Lanka also has gone further in joint management than Philippines — shared responsibility; but still working within context of a line agency mode, which may soon adopt important reforms, but would still be a line agency, i.e. adminstrative mode.

After the discussions, the following conclusions were made:

(a) Governments demand better returns on investments,

(b) Consumer and industrial demand for increasing variety of produce,

(c) Farmers demand better services to support intensification and diversification, and

After lunch, the group visited IIMI Headquarters and proceeded on field trip to Polonnaruwa. The idea of this field trip was to use some concrete Sri Lankan experiences and examples, in order to stimulate and broaden the areas of discussion held during Mr Silva's presentation on the policy context and recent policy innovations in Sri Lanka.

On 17.11.90, the group proceeded for the field trip to Minneriya, they met with staff of the Irrigation System Management Project (ISMP) and water users and groups at the Project Manager's Office. They also visited the distributory canal of Minneriya Scheme. After the lunch with the officers of the Irrigation Department and the Irrigation Management Division, the group returned to Colombo.

18 November 1990

As the third and final day activities, the work started with a review of field trip. Dr Douglas Merrey led the session of reviewing the field trip. (Annex 7)

The following questions were clarified:

(i) What will be the effect of the project on system performance?

Will performance go up/down/neither?

(ii) Should the agency's staff per hectare now be reduced/increased?

(iii) Are four levels of farmer organization too many/too few/correct, for 9,000 hectares?

(iv) Do we expect innovations like changes in crop pattern to be more? less/same, under the new system of farmer organizations?

After tea break, Dr Hummond Murray-Rust (IIMI) and Dr Rudolph Cleveringa made a presentation on "Perspectives in Irrigation Management for Improved Performance." The main issues on this presentation, such as, (a) how do government agencies cope with the implicit reduction in establishment (of field staff) following turnover?, (b) what levels of continued agency support and assistance to turnover systems are required?, and (c) how is such long-term support and assistance to be financed, were discussed and clarified among the participants. (Annex 8)

The final presentation on "Elaboration of Options and Priorities in Irrigation Management for Improved Performance" was made by Mr Charles Abernethy and Dr Rudolph Cleveringa.

(d) Through institutional reform, farmers in better position to demand improvements, raise incomes, and take over greater management and financial responsibility for irrigation system management.

The participants greatly appreciated the opportunity to acquaint themselves with the Irrigation System Management Project (ISMP), and to interact with the different officials as well as farmers. The irrigation engineers and project managers, and the consultants did a commentable job in presenting the innovative approach being implemented through Irrigation System Management Project. (ISMP) This was clearly demonstrated by the intensity of discussion when the field trip was reviewed on the last day of the workshop.

EVALUATION

A brief evaluation of the workshop was prepared by Mr Franz Heim (DSE). (Annex 10). It was rated 'very good' on the achievement of the aim of this workshop. The participants informed that the field trip contributed to them with some new ideas on water users organization, agency-farmer relationship and cost recovery. They also rated the presentations on four major issues were the first rate.

RECOMMENDATIONS AND OTHER COMMENTS

Participants felt that the program schedule was a little too constricted. They informed us that any follow-up workshops with the same participants would be desirable and more emphasize should be given to marketing and post-harvest facilities aspects.

They appreciated and credited DSE and IIMI program co-ordinators for providing them with the opportunity of participating in this workshop.

In overall opinion, this workshop has been an important and successful event during 1990.

Renate
26/2/91

ANNEXURES

ANNEX 1

DSE/IIMI WORKSHOP ON

NEW TRENDS AND POLICIES IN IRRIGATION MANAGEMENT

PROGRAM SCHEDULE

Thursday, 15 November 1990

9:00 - 9:30	-	Opening - IIMI (Charles Abernethy) - DSE (Franz Heim)
9:30 - 10:30	-	Interactive exercise - Zenete Franca
10:30 - 11:00	-	Break
11:00 - 12.30	-	The Systems Approach and its Implications on Management - - Rudolph Cleveringa IIMI)
12:30 - 14:00	-	Lunch
14:00 - 15:30	-	Trends and Policies in Irrigation Management - Doug Merrey and Rudolph Cleveringa

° presentation and clarification

° small group discussions,

(i) favourable and unfavourable conditions as well as potentials and limitations related to the shift from supply - agency based irrigation to demand farmer based service oriented irrigation systems

(ii) favourable and unfavourable conditions as well as potentials and limitations for institutional reorientation for improved management performance

15:30 - 16:00	-	Break
16:00 - 17:30	-	Presentation of results of small group discussions in the plenary

° round table discussion

19:30	-	Reception by the German Embassy

Friday, 16 November 1990

8:30 - 11:30	-	Sustainability and Performance in Irrigation - Charles Abernethy ° presentation and clarification ° small group discussions on (i) threats to sustainability in irrigation (ii) criteria and procedures for M & E of sustainability in irrigation
11:30 - 12:00	-	Policy Arrangement in Irrigation in Sri Lanka - Godfrey de Silva
12:00	-	Leave Hotel to IIMI Headquarters
12:15 - 13:00	-	Lunch at IIMI HQ
13:00 - 14:00	-	Visit to IIMI HQ - Roberto Lenton
14:00	-	Depart to Polonnaruwa - C P Panabokke
21:00	-	Dinner and overnight at Amalian Nivas Hotel

Saturday, 17 November 1990

7:30	-	Breakfast
8:15	-	Depart to Kachcheri, Polonnaruwa
8:30 - 9:30	-	Meeting with staff of the Irrigation System Management Project
9:30	-	Depart to Minneriya
10:15 - 11:00	-	Meeting with water users and groups at the Project Manager's Office
11:00 - 12:00	-	Field visit to distributory canal of Minneriya Scheme
12:15 - 14:00	-	Lunch together with officers of the Irrigation Department and the Irrigation Management Division
14:00	-	Depart to Colombo

Sunday, 18 November 1990

9:30 - 10:30	-	Review of Field Trip - Doug Merrey
10:30 - 11:00	-	Break
11:00 - 13:00	-	Perspectives in Irrigation Management for Improved Performance - Hammond Murray-Rust and Rudolph Cleveringa
13:00 - 15:00	-	Lunch
15:00 - 16:20	-	Elaboration of Options and Priorities in Irrigation Management for Improved Performance - Charles Abernethy and Rudolph Cleveringa
19:30	-	Reception by IIMI

ANNEX 2

List of Participants for the DSE/IIMI Workshop on New Trends and Policies in Irrigation Management

Malaysia

Ms Aminah Mohamed Nawi, Principal Assistant Secretary
Planning and Policy Division, Ministry of Agriculture

Thailand

Dr Aprichart Anukularmphai
Director, Office of National Water Resources Committee
Secretariat of the Prime Minister

Mr Poonsup Piyaanant
Director, Economic Division, The Bureau of the Buget

Mr Tophone Vachanasvasti
Director, Economic Division,
Office of the National Economic and Social Development Board

Mr Arom Khumkomgool
Director, Programmes and Budget Division
Royal Irrigation Department

Philippines

Dr Jose A Galvez
Assistant Amdinistrator for Systems Operation and Equipment Management
National Irrigatrion Administration

Mr Godofredo N Alcasid
Bureau of Soils and Water Management
Department of Agriculture

Mr Librado F Quitoriano
Chief of the Water Resources Division
Infrastructure Staff, National Economic Development Authority

Indonesia

Drs Birong Tambunan, Director of Regional Finance
Directorate General Public Administration and Regional Autonomy
Ministry of Home Affairs

Ir Ir Martono
Director of Irrigation 1
Directorate General of Water Resources Development,
Ministry of Public Works

DSE, Germany

Mr Franz Heim
Dr Rudolph Cleveringa

IIMI, Sri Lanka

Mr Charles Abernethy
Dr Zenete Peixoto Franca
Dr Hilmy Sally
Dr Hammond Murray-Rust
Dr Douglas Merrey
Dr Alfredo Valera
Dr R Sakthivadivel
Dr Masao Kikuchi
Dr Chris Panabokke

Thursday, 15 November 1990

1. Expectations of Participants

- New trends and policies in irrigation and the role of management
- apply recent management theories to irrigation

2. Objective

Offer a concept of Irrigation System Management based on recent thoughts and approaches developed in business and administration to serve as a reference framework throughout the WS.

3. Methodology

- Short basic introduction
- Interactive development of major attributes of an irrigation system
- Development of Situation types for management specific project concepts (if time available)

4. Rationale

- address experience of participants
- offer some, possibly new thoughts
- recognition of familiar elements
- fit them in a framework

1. Management dilemma in irrigation

much literature

many institutions, universities, schools of management

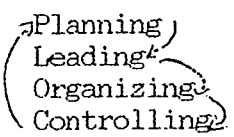
Result: confusing management theory a jungle in irrigation : management meant for some still means water management eg. control of water supply and distribution only

We will try to show that newer theories offer a more comprehensive view

2. Approaches in Management

2.1 Process approach

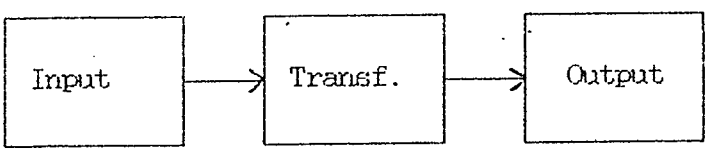
with Management Functions



Closed loop

Decision making
Communication
permeate all functions

2.2 Systems approach



Will elaborate on this

Main Management Functions

2.1 Planning = renewable process
getting goals
establishing strategies and
hierarchy of plans

2.2 Organizing = designing the organizational structure
defining tasks/division of labor
assign persons
reporting

Key words

- complexity
- formalization
- centralization
- concentration
- bureaucracy
- entrepreneurs

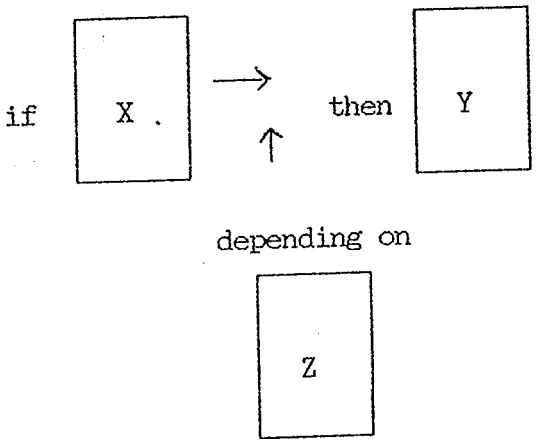
2.3 Leading = engaged in
directing and leading people (attitudes)
and group behavior
(solidarity, lobby)
motivating, directing activities,
selecting communication,
creating and applying incentive/
reward systems,
resolve conflicts of members
of the organization

2.3 Controlling = Monitoring the organization's
performance on the levels
corresponding to the goal system of

1. objectives (benefit)
2. purpose (utilization)
3. outputs

and taking remedial/corrective
action in case of substantial
deviations.

2.3 Contingency approach



Situation variables
or contingency factors

3.1 Irrigation Systems are more than hydraulic infrastructure or structures

12 years ago systems were still very much considered as schemes although it was acknowledged that people (mainly the engineers, to some extend the farmers) play a role.

We've become aware of the nature of irrigation systems to be

complex
socio-economic
technical
systems

Before elaborating more on the nature of irrigation systems I would like to offer a working definition of management, which may be amended to get our specific goals. (see annex)

3.2 Definition of management

It already integrates elements

like: objectives
socio-technical
context
conditions

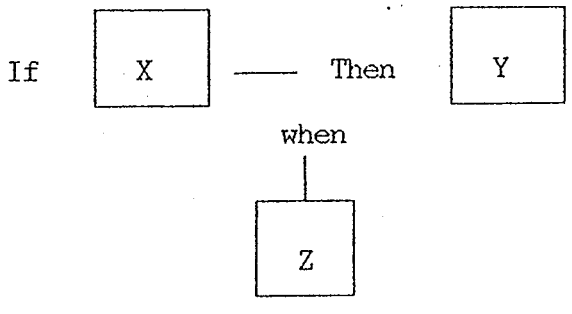
long-term viability = sustainability

3.3 Let us now try to apply this context issue to

irrigation systems : and call

it contingency approach

3.4



3.4 2 major contingencies:

- System Status, (see annex)	later important to discuss the distribution/sharing of responsibilities between agencies/water users
- Management,	important to describe
Uncertainty, (see annex)	the institutional management - capacity - capability - performance potential of both agency and farmers

3.5 Situation Types Framework

(see annex)

Reference literature (GTZ-DSE '89) available through DSE.

DSE/IIMI WORKSHOP PRESENTATION
NEW TRENDS AND POLICIES IN IRRIGATION MANAGEMENT

LEADING QUESTION:

WHAT ARE THE CONDITIONS FAVORING, AND LIMITING, SHIFTING IRRIGATED AGRICULTURE TO A DEMAND-DRIVEN SYSTEM ?

USING SOME DATA FROM SOUTHEAST ASIA SUPPLEMENTED BY SRI LANKA DATA TO OUTLINE TRENDS, EVOLUTION OF IRRIGATED AGRICULTURE SECTOR

LOOKING AT SOME BROAD TRENDS; DETAILS VARY AMONG COUNTRIES AND EVEN WITHIN COUNTRIES; HOPING TO BE PROVOCATIVE

PURPOSE:

TO SET SCENE FOR DISCUSSIONS IN SMALL GROUPS ON WHAT IS NEEDED TO CREATE CONDITIONS CONDUCIVE TO DEMAND-DRIVEN IRRIGATED AGRICULTURE

UNTIL EARLY 1980S --

HEAVY INVESTMENT FOR CONSTRUCTING NEW RICE-BASED IRRIGATION SYSTEMS

SPECIFIC MOTIVES VARY AMONG COUNTRIES: ACHIEVING RICE-SELF-SUFFICIENCY;
OVERCOME SHORTAGES OF RICE
EXPORT OF RICE (THAILAND)
NEED TO ABSORB RISING SUPPLY RURAL LABOR

UNDERLYING ABOVE MOTIVES, RELATIVELY HIGH RICE PRICES

CONSTRUCTION EMPHASIS WAS A RATIONAL RESPONSE TO CONDITIONS

CHANGES SINCE ABOUT 1980

DUE TO SUCCESS OF PREVIOUS POLICIES ---

1. DECLINING REAL RICE PRICES -- TREND EXPECTED BY WB TO CONTINUE TO 2000

   (SUPPLY UP, DEMAND DOWN, AS INCOMES RISE, INITIAL INCREASE IN RICE DEMAND AND THEN DECLINE; SUBSIDIES BY EXPORTING COUNTRIES)

2. DECLINING RETURNS TO INVESTMENT IN NEW CONSTRUCTION

   RISING COSTS -- BEST SITES GONE, NEW DESIGN CRITERIA

   DISAPPOINTING PERFORMANCE -- RETURNS

   LOWER THAN EXPECTED YIELDS; DIFFERENTIAL YIELDS WITHIN SYSTEMS; LOWER INTENSITY THAN EXPECTED

   INADEQUATE MAINTENANCE OF SYSTEMS -- FINANCING O&M; MANAGEMENT QUALITY

3. DRASTIC DECLINE IN INVESTMENTS IN IRRIGATION CONSTRUCTION (AND AGRICULTURE GENERALLY) IN SE ASIA

Graphs

RESPONSES TO THESE RECENT TRENDS

1. INCREASED EMPHASIS ON DIVERSIFICATION AND INTENSIFICATION

   TO RAISE FARMERS' INCOMES
   ABSORB MORE LABOUR
   BETTER USE OF WATER
   EXPORT EARNINGS
   AVOID RICE MOUNTAIN (EUROPE -- BUTTER MOUNTAIN)

   REQUIRES MORE RESPONSIVE IRRIGATION SYSTEM MANAGEMENT

2. REHABILITATION AND MODERNIZATION PROJECTS TO IMPROVE PERFORMANCE, ENABLE DIVERSIFICATION

   HIGHER RETURNS, LOWER COSTS, QUICKER RETURNS, LOBBYING BY POLITICALLY INFLUENTIAL IRRIGATED FARMERS

3. MOBILIZE FARMERS' RESOURCES (RAISE FUNDS)

   BUDGETARY PRESSURES FOR O&M FUNDS; DONOR PRESSURES; BUT POLITICAL PROBLEMS -- DIFFICULT TO SIMPLY FORCE HIGHER PAYMENTS, AGAIN WHEN RICE PROFITS SQUEEZED

4. "FARMER PARTICIPATION"

INITIALLY TO GET FARMERS TO CONTRIBUTE LABOR IF NOT FUNDS TO REHABILITATION, MAINTENANCE. NOT PERFORMANCE-DRIVEN

EVOLUTION IN SOME COUNTRIES TO GREATER AND GREATER DEVOLUTION OF RESPONSIBILITY, AUTHORITY TO FARMERS ORGANIZATIONS

LEADS TO RE-THINKING OF MANAGEMENT SYSTEMS, AGENCY MISSION AND STRUCTURE, LEGAL PROVISIONS

"JOINT MANAGEMENT", "SELF MANAGEMENT", "TURNOVER" TERMS REPLACE "FARMER PARTICIPATION" EMPOWERMENT

5. MUTUALLY REINFORCING TRENDS (REF TO MORNING SESSION)

DIVERSIFICATION & INTENSIFICATION -- BETTER SYSTEM MANAGEMENT -- INSTITUTIONAL CHANGES -- RESOURCE MOBILIZATION

CONCLUSION

1. GOVERNMENTS DEMAND BETTER RETURNS ON INVESTMENTS

2. CONSUMER AND INDUSTRIAL DEMAND FOR INCREASING VARIETY OF PRODUCE

3. FARMERS DEMAND BETTER SERVICES TO SUPPORT INTENSIFICATION, DIVERSIFICATION

4. THROUGH INSTITUTIONAL REFORM, FARMERS IN BETTER POSITION TO DEMAND IMPROVEMENTS, RAISE INCOMES, AND TAKE OVER GREATER MANAGEMENT AND FINANCIAL RESPONSIBILITY FOR IRRIGATION SYSTEM MANAGEMENT.

LEADING QUESTION:

WHAT INSTITUTIONAL ARRANGEMENTS ARE NEEDED TO ACHIEVE AND SUSTAIN THE SHIFT TO DEMAND-DRIVEN AGRICULTURE?

STARTING POINTS:

MAJOR IRRIGATION CONSTRUCTION ERA IS DEAD. SHIFT FROM CONSTRUCTION TO MANAGEMENT ORIENTATION IS UNDERWAY.

INSTITUTIONAL REFORM IS THE KEY TO CREATING A DEMAND-DRIVEN IRRIGATED AGRICULTURAL SECTOR.

NO COUNTRY WILL ACHIEVE THE FULL POTENTIAL PERFORMANCE OF IRRIGATED AGRICULTURE AS LONG AS IRRIGATION SYSTEMS ARE UNDER GOVERNMENT CONTROL.

GOVERNMENT LINE DEPARTMENTS ESPECIALLY ARE NOT ABLE TO BE FULLY CLIENT-ORIENTED, DEMAND-DRIVEN.

THEY ARE HIERARCHICAL, PERSONNEL POLICIES EMPHASIZE SENIORITY, THEY ARE RULE-DRIVEN, ACCOUNTABILITY IS UPWARD AND NOT TO CLIENTS

IN OTHER WORDS THEY OPERATE ACCORDING TO THE ADMINISTRATIVE MODE

THEY DO NOT OPERATE IN AN ENTREPRENEURIAL OR MANAGEMENT MODE

DISTINCTION BETWEEN TWO MODES OF OPERATION:

ADMINISTRATION MODE	ENTREPRENEURIAL OR MANAGEMENT MODE
FIXED RESOURCES TO MEET ROUTINE GOALS	EXPLORES OPPORTUNITIES IN A CHANGING ENVIRONMENT (PERFORMANCE-ORIENTED)
ACKNOWLEDGES MANY CONSTITUENCIES; TAKES FEW RISKS	CLIENT-DRIVEN SEIZES OPPORTUNITIES - TAKES RISKS
AUTHORITY STRUCTURE TENDS TO INERTIA & RESISTANCE TO CHANGE	USES RESOURCES FLEXIBLY TO ACHIEVE OBJECTIVES; CHANGE-ORIENTED
HIERARCHICAL BUREAUCRATIC STRUCTURE---	FLAT STRUCTURES, WITH MULTIPLE NETWORKS
SUPPLY-DRIVEN	DEMAND-DRIVEN

THE ADMINISTRATIVE MODE WORKS WELL FOR CONSTRUCTION OF NEW LARGE SYSTEMS

IT WORKS WELL FOR "ADMINISTERING" IRRIGATION SYSTEMS THAT OPERATE ON A CONTINUOUS FLOW BASIS TO SERVE RICE

IT WORKS WELL UNDER CONDITIONS OF EXTREME SCARCITY WHERE ALLOCATIONS AT A MACRO LEVEL MUST BE ACCORDING TO STRICT RULES

BUT WITH SHIFT TO IRRIGATION THAT IS DEMAND-DRIVEN, THAT SUPPORTS AN EVER-CHANGING PATTERN OF DIVERSIFIED CROPS REQUIRING FREQUENT AND QUICK RESPONSE TO CHANGING DEMANDS, I.E., CLIENT-ORIENTED IRRIGATION MANAGEMENT, IT IS NECESSARY TO SHIFT MODE OF OPERATION.

FUNDAMENTAL QUESTION:

WHAT SHALL BE THE ROLES OF, AND RELATIONSHIPS BETWEEN:

FARMERS AND IRRIGATION MANAGEMENT AGENCIES?

FOCUS ON FARMERS:

SHIFT FROM "FARMER PARTICIPATION" TO "JOINT MANAGEMENT", SELF MANAGEMENT", "TURNOVER" IN SOME COUNTRIES ALREADY DISCUSSED.

EXPERIENCES IN MANY COUNTRIES SHOW FARMERS ARE PREPARED TO GET ORGANIZED AND TAKE GREATER RESPONSIBILITY FOR OPERATING AND MAINTAINING IRRIGATION SYSTEMS.

BUT WITH RISING EXPECTATIONS, INCREASING "STAKE" OF FARMERS IN OPERATION AND LONGER TERM MAINTENANCE OF IRRIGATION SYSTEM, FARMERS EXPECT MORE AUTHORITY AS WELL.

DIFFERENT PATTERNS:

1. "PARTICIPATION" REMAINS INFORMAL, FOCUSED ON LOWER LEVELS OF SYSTEMS, MOSTLY EXPECT FARMERS TO PAY SOME COSTS, DO SOME MAINTENANCE LABOR, OR ROTATE WATER.

   THIS IS NOT A STABLE SITUATION SOCIOLOGICALLY

   IT WILL EITHER RELAPSE TO VERY LOW LEVEL OF FARMER INTEREST AND INPUTS,

   OR

   LEAD TO DEMAND FOR GREATER AUTONOMY AND AUTHORITY

   (EXAMPLES: PHILIPPINES, SRI LANKA)

2. JOINT MANAGEMENT (TURNOVER)

   TWO SUBPATTERNS ON LARGE IRRIGATION SYSTEMS:

   SHARED: FARMERS' REPRESENTATIVES AND AGENCY STAFF CO-MANAGE THE SYSTEM

   EXAMPLE: SRI LANKA

   DEMARCATED: FARMERS' ORGANIZATIONS TAKE FINANCIAL AND MANAGEMENT RESPONSIBILITY FOR SUBSYSTEMS, BUT AGENCY RETAINS FULL RESPONSIBILITY FOR OVERALL SYSTEM

   EXAMPLE: PHILIPPINES

PREDICTION:

SINCE BOTH SUBPATTERNS ARE STILL EVOLVING, DIFFICULT TO SAY WHAT WILL HAPPEN OVER NEXT DECADE, BUT:

EXPECT THE DEMARCATED PATTERN TO BE UNSTABLE: IRRIGATION ASSOCIATIONS WILL DEMAND A ROLE IN LARGER SYSTEM MANAGEMENT AND FINANCING POLICIES.

THE SHARED PATTERN IS LIKELY TO EVOLVE FURTHER TO EITHER SELF-MANAGED SYSTEMS (I.E., SYSTEMS MANAGED THROUGH FARMER-OWNED CORPORATE ORGANIZATIONS) OR AT LEAST FARMER-DOMINATED MANAGEMENT SYSTEM.

ON SMALL SYSTEMS, SELF-MANAGEMENT IS A FEASIBLE FUTURE SCENARIO, AS SHOWN ALREADY IN THE COMMUNAL OR FARMER-MANAGED IRRIGATION SYSTEM (FMIS) SECTOR

BACK TO IRRIGATION MANAGEMENT AGENCIES:

TWO PATTERNS DISCERNIBLE IN SOUTHEAST ASIA

1. MODERNIZED LINE AGENCIES WITH LIMITED FARMER "PARTICIPATION"

   THAILAND, MALAYSIA, INDONESIA

   A. MALAYSIA DEPARTMENT IS ATTEMPTING TO REORGANIZE ITSELF AND ADOPT MODERN MANAGEMENT PRACTICES WITHIN THE CONTEXT OF CONTINUING AS A LINE AGENCY, AND MINIMAL ATTEMPTS TO EXPERIMENT WITH FARMER INVOLVEMENT.

IS A MODERN MANAGEMENT MODE COMPATIBLE WITH GOVERNMENT LINE AGENCY STRUCTURE?

   B. THAILAND SEEMS TO BE STILL EXPERIMENTING WITH VARIOUS APPROACHES TO FARMERS, WITH PERHAPS LESS ATTENTION THAN MALAYSIA TO MODERNIZING ITS OPERATIONAL MODE.

   C. INDONESIA SEEMS TO BE TURNING OVER SMALLER SYSTEMS TO REDUCE ITS O&M COST BURDENS, WITH MINIMAL ATTEMPTS TO MODERNIZE ITS OPERATIONAL MODE

2. DEVOLVING AUTHORITY TO FARMERS ORGANIZATIONS COMBINED WITH FINANCIALLY AUTONOMOUS AGENCY ABLE TO WORK IN ENTREPRENEURIAL MANAGEMENT MODE.

A. PHILIPPINES HAS GONE FURTHEST IN BOTH DEVOLVING AUTHORITY TO FARMERS ORGANIZATIONS, AND REFORMING THE AGENCY TO BE MORE CLIENT-ORIENTED.

CONSIDERABLE RESEARCH CONFIRMS WHAT FILIPINOS ALREADY KNOW: KEY REFORM IN NATIONAL IRRIGATION ADMINISTRATION WAS TO MAKE IT FINANCIALLY AUTONOMOUS AND RESPONSIBLE.

MAJOR WEAKNESS MAY BE IN THE DEMARCATED JOINT MANAGEMENT PATTERN, WHICH MAY PROVE UNSTABLE.

A SECOND POSSIBLE SOURCE OF DIFFICULTIES IS NIA IS STILL GOVERNED BY MANY CIVIL SERVICE RULES, LIMITING ITS ABILITY TO BE A PURELY DEMAND-DRIVEN CLIENT-ORIENTED ENTREPRENEURIAL ORGANIZATION.

B. SRI LANKA CASE: GONE FURTHER IN JOINT MANAGEMENT THAN PHILIPPINES -- SHARED RESPONSIBILITY; BUT STILL WORKING WITHIN CONTEXT OF A LINE AGENCY MODE, WHICH MAY SOON ADOPT IMPORTANT REFORMS, BUT WOULD STILL BE A LINE AGENCY (ADMINISTRATIVE MODE).

IS JOINT MANAGEMENT BETWEEN AUTONOMOUS RESPONSIBLE FARMERS ORGANIZATIONS,

AND LINE AGENCY WITH ADMINISTRATIVE MODE OF OPERATION

SUSTAINABLE?

AGENCY–FARMER RELATIONSHIP	IRRIGATION SERVICE – MODE OF OPERATION	
	ADMINISTRATIVE	ENTREPRENEURIAL
DEMARCATED/SPLIT MANAGEMENT — STRONG FOS		
DEMARCATED/SPLIT MANAGEMENT — WEAK FOS		
SHARED/JOINT MANAGEMENT		

SUSTAINABILITY AND PERFORMANCE IN IRRIGATION

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Issues paper, for DSE/IIMI workshop for irrigation policy-makers in South-East Asia. Session 3. (16 November 1990)

THE SUSTAINABILITY CONCEPT

Sustainability is much discussed nowadays as a goal of rural development policies. By itself, the word does not mean much; or rather, its meaning is vague, and different people understand it in different ways.

To clarify it, we must first give it an object. That is, we must say what it is that needs to be sustained. So we can aim for sustainable resource use, or sustainable agriculture, or sustainable growth rates, and so on. These are very different.

There are people who give high priority to sustaining aspects of the natural environment, such as bio-diversity. This approximates to the conservationist viewpoint. Others want primarily to sustain certain sorts of human interventions in that environment, such as agricultural and irrigation systems. This approximates to the development viewpoint.

The concept of "sustainable development" is an integrating idea, and a bridge between conservation and development. It recognizes that development can be damaging; but also that in the current context of population growth and rising human goals, development must happen, and must prosper.

So the quest for sustainable development means identifying types and intensities of development, and corresponding modes and levels of operation and management, that seem capable of being continued for as far as we can see into the future without significant diminution of their benefits and without causing significant harm to others.

Here, we shall try to apply these principles to the sustainability of irrigation systems.

CHANGES OF SUSTAINABILITY

Sustainability is not a physical property. It is a concept that relates the physical artefacts of development with the socio-economic and biological environments in which they are placed. As these environments can change, so sustainability can change.

In north Yemen there are immense terrace systems reputedly centuries old; that is, they have been proved to be a sustainable system. The economic attractions of employment in oil-producing countries has depleted the labor resource formerly available for their maintenance, and many collapses have occurred. A socio-economic external change has altered the system's sustainability.

Such examples show that in changing times, sustainability of operational practices should not be taken for granted, but should be kept under review.

INSTITUTIONS

Svendsen (1987)[1] has made the essential identification of human institutions as "the keys to sustainability". He says "over a period of .... a few seasons, no piece of infrastructure is stable or sustainable without institutions to operate, repair, adapt and maintain it."

This point is quite vital in respect of irrigation systems, yet it is by no means always incorporated into writings about sustainability. It illuminates the preceding point about changes in sustainability.

It emphasizes that, when we try to determine whether a specific system possesses sustainability, we must examine the health of its institutions: their finances, their energy, their incentives, their objectives.

WIDER CONTEXT

Irrigation systems do not exist in isolation but as part of various larger systems: regional rural development systems, ecological systems, national food production systems, and so forth. They will be more likely to be sustainable if they conform well to these larger system environments and do not develop incompatible goals.

There are well-known recent cases (in Florida and California and many others) where changes in the chemistry, quantity or timing of effluent water of irrigation systems have caused unacceptable biological effects downstream; so that the practices causing these results were not sustainable.

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[1] Sustainability in irrigated agriculture by Mark Svendsen
Working Paper No.4

There are also converse examples (from north China, for example) where the introduction of irrigation has raised the population-supporting capacity of valley-bottom land and so has facilitated re-settlement of people away from steep, eroding land; in such cases, irrigation is increasing the sustainability of a more complex system.

THREATS

The idea that we need to sustain the performance of an irrigation system implies that there are opposing forces which would otherwise threaten to bring it down. Identifying these threats should be the key to various protection actions by managements.

There are three major avenues through which system sustainability can be threatened:

(i) systems may lose sustainability because they are no longer able to deliver their benefits

(ii) they may lose sustainability because, though they are performing well internally, they are injuring other interests

(iii) they may lose sustainability because people no longer want to devote necessary efforts to some key aspects.

We can also categorize some of the major sources of these threats:

Physical	Siltation
	Water-logging
	Salinization
	Loss of fertility
Social/economic	Institutional weakness
	Economic competition
	Water-related diseases
	Labor deficiencies
Financial	Operating costs
	Inadequate funding mechanisms (fee collection, etc.)
	Inadequate incentives

Biological/environmental	Weed growth
	Effluent pollution
	Downstream hydrologic changes.

RESILIENCE

The resilience of a system is the rate at which its performance can recover after an adverse event.

Systems will usually be more resilient to some kinds of threat than to others.

Diversity is a factor that gives resilience to a system : especially diversity in crops, and diversity of activities. The latter expression means the incorporation of economic activities other than cropping, such as livestock, fish, forestry. Mono-crop systems may show lower resilience.

PERFORMANCE

If the object that needs to be sustained is an irrigation system, we know that there must be an intimate linkage between the system's sustainability and the various aspects of its performance. We have noted that sustainability requires healthy institutions. Unless there is a level of performance that is at least maintained with sufficient consistency, or (more desirably) increases steadily, this condition will probably not be met.

MONITORING

The most difficult question, in regard to sustainability, is how to determine whether a particular system has, or has not, got this desired feature.

We need monitoring systems that will give us early warning of conditions that may lead to system deterioration or collapse.

From the preceding arguments, it seems that such monitoring arrangements should concentrate on :

a. Specific aspects of performance, especially outputs, net economic returns to farmers, input utilization parameters such as crop intensity, and net budgetary costs to managing agencies. These have to be measured continuously and in a consistent manner, because sustainability depends not on single values but on rates of change over years.

b. Indicators of threats, such as those outlined earlier. System managements need to make choices as to which items carry greatest risks to their specific systems.

c. Indicators of institutional strength. Policy-makers need to develop indicators that will show whether the capabilities of the relevant institutions and organizations are weakening. There have been various such studies on farmers' organizations; but probably more important at present is the effectiveness of governmental and para-statal institutions.

d. Resilience should also be analysed. This is not so much a question of direct monitoring, as of analysis of the data collected under the preceding categories, in order to see whether systems possess the capacity to recover after adverse events such as droughts, energy cost increases, crop price falls, pest attacks, etc.

SUMMARY OF ISSUES FOR MANAGERS AND POLICY-MAKERS

The following is a brief check-list of sustainability issues that need to be addressed in practical circumstances:

a. What is it that is to be sustained ?

b. Which threats are most important ?

- Which are most likely ?
- To which is the system most vulnerable/least resilient ?

c. How can we know whether we have achieved sustainability ?

d. How can we monitor for sustainability ?

e. How can we evaluate ?

f. What management actions are possible/desirable to enhance sustainability?

SUSTAINABILITY

First question is :

WHAT IS IT THAT WE WANT TO SUSTAIN ?

Sustainable natural resource use
Sustainable agricultural systems
Sustainable growth rate
etc

Sustaining the natural environment
→ CONSERVATION

Sustaining human interventions in the natural environment
→ DEVELOPMENT

THE SYNTHESIS — SUSTAINABLE DEVELOPMENT

Today our topic is
SUSTAINABLE IRRIGATION SYSTEMS

SUSTAINABILITY IS NOT CONSTANT.
IT CHANGES.

IT IS NOT A PHYSICAL CHARACTERISTIC OF A SYSTEM.

SOCIO-ECONOMIC CIRCUMSTANCES MAY CHANGE IT.

POLITICAL TRENDS MAY CHANGE IT.

SUSTAINABILITY IS INSTITUTIONAL

No piece of infrastructure can function well for long without institutions which operate it / repair it / maintain it / adapt it.

SYSTEM GOALS MUST BE COMPATIBLE WITH SURROUNDING / NEIGHBOURING SYSTEMS

There can be

Goal conflicts

e.g. effluent pollution

Goal reinforcement

e.g. irrigation reduces pressures on fragile lands

THREATS

We need to sustain systems because there are opposing forces which threaten their existence/performance.

Identify the possible threats. Then identify protective actions.

SOME AVENUES FOR THREATS ARE:

___ REDUCED BENEFITS

___ INJURY TO OTHERS

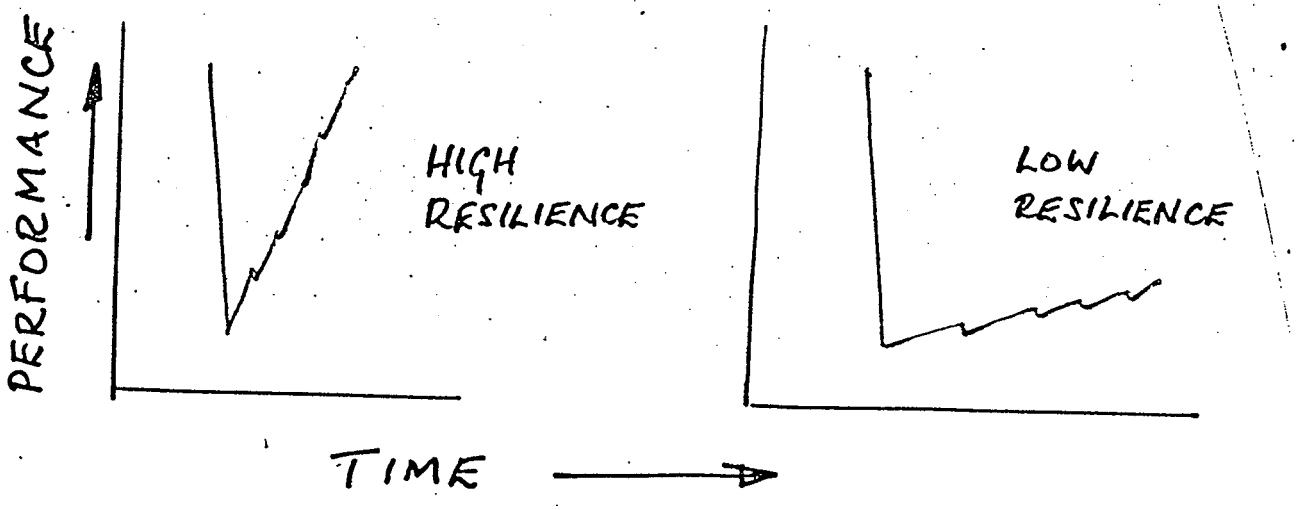
___ LOSS OF MOTIVATION OF PARTICIPANTS

SOURCES AND KINDS OF THREAT

PHYSICAL	Siltation Water-logging Salinity Fertility decline
SOCIO-ECONOMIC	Institutional weakness Economic competition Labour deficiencies Water-related diseases
FINANCIAL	Management costs Weak funding mechanism Inadequate incentives
BIOLOGICAL/ ENVIRONMENTAL	Pollution Weeds Downstream hydrologic change

RESILIENCE

RESILIENCE IS THE RATE OF RECOVERY AFTER AN ADVERSE SHOCK / IMPACT



System resilience is usually better for some kinds of threat than for others

So → Diversity helps resilience

DON'T PUT ALL THE EGGS IN ONE BASKET

Diversity of crops

SUSTAINABILITY AND PERFORMANCE

Sustainability needs healthy institutions

Institutions weaken if performance deteriorates

So → Key performance indicators must at least be maintained, or improved.

So → Monitor rates of change of key performance indicators.

MONITORING SUSTAINABILITY

Question : How can we ever know whether we have sustainability ?

(i.e. before it collapses)

Develop early warning systems.

Concentrate on :

a Motivators
- Output
- Net returns
- Input utilization
- Budgetary burden

b Likely threats

c Institutional strength

d Resilience

SUMMARY OF ISSUES

WHAT IS TO BE SUSTAINED ?

WHICH THREATS TO IT ARE MOST SIGNIFICANT ?

—— WHICH MOST LIKELY ?

—— TO WHICH IS IT MOST VULNERABLE/ LEAST RESILIENT ?

HOW CAN WE KNOW WE HAVE ATTAINED IT ?

HOW CAN WE MONITOR ITS LEVEL ?

HOW CAN WE EVALUATE ?

WHAT MANAGEMENT ACTIONS ARE POSSIBLE, FOR ENHANCING IT ?

ANNEX 6

RECENT POLICY INITIATIVES IN IRRIGATION DEVELOPMENT IN SRI LANKA*

INTRODUCTION

Agricultural development policies in Sri Lanka over the past half century or more, and, particularly since the gaining of independence in 1948, have been dominated by a concern for achieving self-sufficiency in basic food items. Public investment policies and the allocation of resources were greatly influenced by this dominant policy. The implementation of this policy saw the rapid expansion of the acreage under cultivation and, consequently, a shift of attention to areas in the so-called "Dry Zone" of the Island. This was brought about by the large-scale development of irrigation through restoration of ancient irrigation systems and the construction of new irrigated settlements.

Today, out of some 730,000 ha. in the domestic agricultural sector, about 263,000 ha. are irrigated under major irrigation schemes and another 186,000 ha. under minor irrigation systems. Irrigated land in the dry zone contributes about 70% of the total paddy production, while the major systems produce 55% of the total. Irrigation continues to be an important factor in the achievement of self sufficiency in basic food items, and will be also an important contributor towards the development of export oriented cash crops and industrial crops.

In the latter part of the 1960's the Government initiated a shift towards greater emphasis on better water management and other aspects related to the increased productivity of irrigation water. The ensuing period, apart from paying greater attention to rehabilitation of existing irrigation works, introduced lift irrigation to increase production of subsidiary food crops. Attempts were also made to establish linkages between irrigation, agricultural inputs and marketing, so as to promote some degree of integrated management in the Government's settlement projects. This programme paid good dividends when average paddy yields increased from 36 bushels per acre in 1960 to 51 bushels per acre in 1970.

After 1977, the Government launched on a massive multi-purpose investment programme. The main features of this were:

a) The Accelerated Mahaweli Programme for irrigation and power generation.

b) The completion of several large irrigation settlement schemes, outside the Mahaweli Programme, which had been planned or had already commenced.

c) The Rehabilitation of about 4000 village irrigation schemes, to yield quick returns on investment and to give a geographical spread of benefits in the rural areas.

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* By N G R de Silva, Director/Secretariat
Irrigation Management Policy Support Activity.

Prepared for the
DSE/IIMI Policymakers Workshop, Colombo - 16th November

d) The rehabilitation of all the major irrigation schemes with particular attention to water management aspects.

In the last 10 years, over two-thirds of the expenditure on development has been allocated to public investment projects in agriculture and power, particularly under the Accelerated Mahaweli Programme. This was in line with the Government's objective of promoting agricultural development and establishing a modern power generation and distribution infrastructure. The Public Investment Programme for the near future, however, strikes a more balanced approach among the different sectors of the economy. The Government will prioritize projects in the different sectors and identify those which could be phased out over a longer period of time without reducing their economic rate of return.

For the future, Government intends to consolidated previous gains in rice production and to launch a major diversification effort with a view to increasing production of high-value exportable crops. Among the principal aims of the new agricultural development strategy is the plan to rehabilitate existing irrigation facilities and to focus greater attention on improving land and water resource management.

WATER MANAGEMENT

The increased importance of water management in irrigation development started in the early 1980's. The first major project, the Tank Irrigation Modernization Project (TIMP) during the period 1977-1983, was intended to effect better water management by improving the physical irrigation systems in five major tank irrigation schemes in the North Central Province. It was implemented with foreign funding, and showed a definite bias towards a purely engineering solution to problems of irrigation management. This project did not fully realise its objectives largely because of the low priority attached to factors besides engineering considerations.

The next project taken up for rehabilitation was the Gal Oya Project, in 1979, with assistance from USAID. This Project moved a step forward with the realization that the participation of the beneficiaries (the farmers) was a pre-requisite to a successful rehabilitation and water management programme. The project objectives included the formation of farmers' organizations and establishing close interaction between farmer organizations and officials. the Agrarian Research & Training Institute (ARTI) was assigned the responsibility for the farmer organization component of the project. The AR&TI implemented the programme with the assistance of consultancy services provided by Cornell University.

INTEGRATED MANAGEMENT IN IRRIGATION SCHEMES

The experiences gained in the Gal Oya Water Management Project and in many other pilot projects which were carried on in other major irrigation schemes, prompted the Government to set up a "Water Management Unit" in the Ministry of Lands, & Land Development, in 1982. In 1984 this Unit was upgraded to create the Irrigation Management Division (IMD) with a multi-disciplinary staff, to forge ahead with an integrated approach in irrigation development programmes. The IMD initiated a programme for the Integrated Management of major Irrigation Systems (INMAS) which was to initially cover 25 major irrigation systems. A Resident Project Manager was appointed to each project with responsibilities to coordinate and implement four specific areas of activity, namely:

a) Input supplies
b) Operation & Maintenance
c) Farmer Organization
d) Training

Under this Programme, the emphasis was on the organization of farmers and farmer participation in the management of the projects, particularly in O & M and in water management. The integrated project management was characterized by the setting up of coordinating committees of farmer representatives and state officials at a number of levels within any given project, the coordinating committee at the highest (Project) level being chaired by the Resident Project Manager.

REHABILITATION PROJECTS

In addition to the TIMP and Gal Oya Projects mentioned earlier, two major projects were initiated subsequently for rehabilitation of existing irrigation schemes with greater emphasis on water management and farmers' participation. These are the Major Irrigation Rehabilitation Project (MIRP) with World Bank assistance and the Irrigation Systems Management Project (ISMP) with USAID assistance. The implementation of these two projects will see a great advance in irrigation development, particularly in relation to the new participatory management approach that has now come to stay.

In the field of village irrigation schemes, the World Bank funded Village Irrigation Rehabilitation Project (VIRP) is being presently implemented and nearing completion. Another World Bank project, the National Irrigation Rehabilitation Project (NIRP) is in the preparatory stage. It is scheduled to take off sometime in 1991. These projects too are bound to further enhance the progress towards a radical change in the concepts of water management, rehabilitation and modernization in irrigation schemes.

CONTRIBUTION FROM IIMI

The International Irrigation Management Institute (IIMI), based in Sri Lanka, has been extremely useful to the Government of Sri Lanka (GOSL) in its recent advances in the field of irrigation management, especially in relation to its recent policy initiatives in this area. This interaction between IIMI and the (GOSL) is effected through the medium of the IIMI - Sri Lanka Consultative Committee which has been in existence now for several years.

One of the most significant contributions from the IIMI - Sri Lanka Consultative Committee was the initiation of action to formulate a basic policy statement on participatory management in irrigation schemes for presentation to Government. This resulted in the submission and acceptance by Cabinet of a Policy Paper on this subject in late 1989, setting out the broad principle of joint management in major irrigation schemes and the turning over of village schemes to farmer organizations.

IRRIGATION MANAGEMENT POLICY SUPPORT ACTIVITY (IMPSA)

This is a USAID funded project which commenced this year, and is designed to assist the GOSL in formulating detailed policy statements and implementation strategies in irrigation management and, more generally, in the irrigated agriculture sector. It is structured in such a way that all the Heads of Ministries

and Government agencies that deal with irrigated agriculture are brought together into a process to achieve consensus on the various issues and problems relating to the implementation of the Government's participatory irrigation management policy.

At the base of the structure is a Secretariat comprising of a small multi-disciplinary team of local consultants. The Secretariat is directly assisted by the Sri Lanka Field Operations Division of the International Irrigation Management Institute (IIMI/SLFO). The Secretariat services a high powered committee of Secretaries and Heads of agencies of the relevant ministries named the Irrigation Management Policy Advisory Committee (IMPAC), which is chaired by the Secretary of the Ministry in charge of Irrigation. It is this Body that recommends policy changes to the Government and subsequently, upon approval of Government, implements such changes.

The methodology for achieving consensus on policy issues basically consists of the following components:

a) The preparation of "Working Papers" by the IMPSA Secretariat on each individual component in the irrigated agriculture sector.

b) The engagement of local consultants, and expatriate consultants where necessary.

c) Conducting a series of "Consultative Workshops" with state officials at all levels as well as with farmer representatives.

d) Discussion and approval of the prepared policy statements by a sub-committee of IMPAC, called the IMPAC Working Group.

THE VISION OF IRRIGATED AGRICULTURE FOR THE FUTURE

The main activity under the first phase of the IMPSA Project, which was completed last October, was the development of a broad policy statement incorporating "a vision of irrigated agriculture and irrigation management for the year 2000 and beyond". Following the procedure described in the preceding para, a Policy Paper has been developed under this heading, and is due for presentation to the Government shortly.

This Policy Statement clearly spells out the missing gaps in the broad participatory irrigation management policy of the Government and states the possible directions that must be taken in respect of each of the major issues in this area. It particularly emphasises an approach which is not only participatory but also dynamic, diversified, efficient and equitable, and which will ensure adequate productivity, profitability, and sustainability in the irrigated agriculture sector. It prescribes a decreasing role for the state sector and a change in its function from control to facilitator and provider of services and inputs. It places the greatest reliance on the ability of people to manage their own affairs, even in irrigation development, given the right conditions and the proper environment.

SOME QUESTIONS AFTER THE FIELD VISIT

WHAT WILL BE THE EFFECT OF THE PROJECT ON SYSTEM PERFORMANCE ?

Will performance go up / down / neither ?

SHOULD THE AGENCY'S STAFF PER HECTARE NOW BE REDUCED / INCREASED ?

ARE FOUR LEVELS OF FARMER ORGANIZATION TOO MANY / TOO FEW / CORRECT, FOR 9,000 HECTARES ?

DO WE EXPECT INNOVATIONS LIKE CHANGES IN CROP PATTERN TO BE MORE / LESS / SAME, UNDER THE NEW SYSTEM OF FARMER ORGANIZATIONS ?

ANNEX 8

by Hammond Murray-Rust

IRRIGATION MANAGEMENT FOR IMPROVED PERFORMANCE

PERFORMANCE: DEGREE OF ACHIEVEMENT OF SPECIFIED OBJECTIVES

OBJECTIVES: NEED TO BE EXPRESSED IN SOME FORM OF NORM OR STANDARD
eg: limits (potential)
rate of growth

HOWEVER: OBJECTIVES ARE NOT NECESSARILY ALL ACHIEVED AT THE SAME LEVEL AT THE SAME TIME - THE MIX CHANGES AND THE STANDARDS MAY KEEP CHANGING.

"Irrigation performance is generally viewed as inadequate and needs to be improved through a greater focus on management."

BUT

"Since 1960 S.E. Asia has been transformed through irrigated agriculture from rice deficit and the threat of mass starvation to rice self-sufficiency and even surplus".

1. Sector Objectives : 1965 – 1980

Primary Objective : RICE SELF-SUFFICIENCY

Rationale :
- Avoid mass starvation
- Import Substitution
- Meet growing urban demand

(Regional Development)
(Political Stability)

Strategies :
- Massive investment in irrigation infrastructure
- Heavy subsidies for inputs (fertilizer, credit, etc)
- Ag. research & extension
- Support prices for rice
- (Transmigration / resettlement)

Consequences :
- Massive total production gains
- Relatively low performance at the project level

"Project" performance evaluated in terms of:

- irrigated area
- cropping intensity
- yield per ha

Reason for "low project performance"

e.g. Indonesia

TARGET : 35 m. tons of rice/year

Area : 7 m. ha irrigated rice land
C.I : 1.5

Required Yield = 3.5 tons/ha/season

"Economic" Yield = ≃5.0 tons/ha/season.

Thus by about 1980 in all SE Asia, the focus on capital investment had led to a Surplus capacity, a condition that is not necessarily consistent with high performance.

A specific problem facing the region is how to sustain the surplus capacity until demand catches up. However, more important from the performance perspective is a major change in the sector objectives.

2. Sector Objectives since 1980

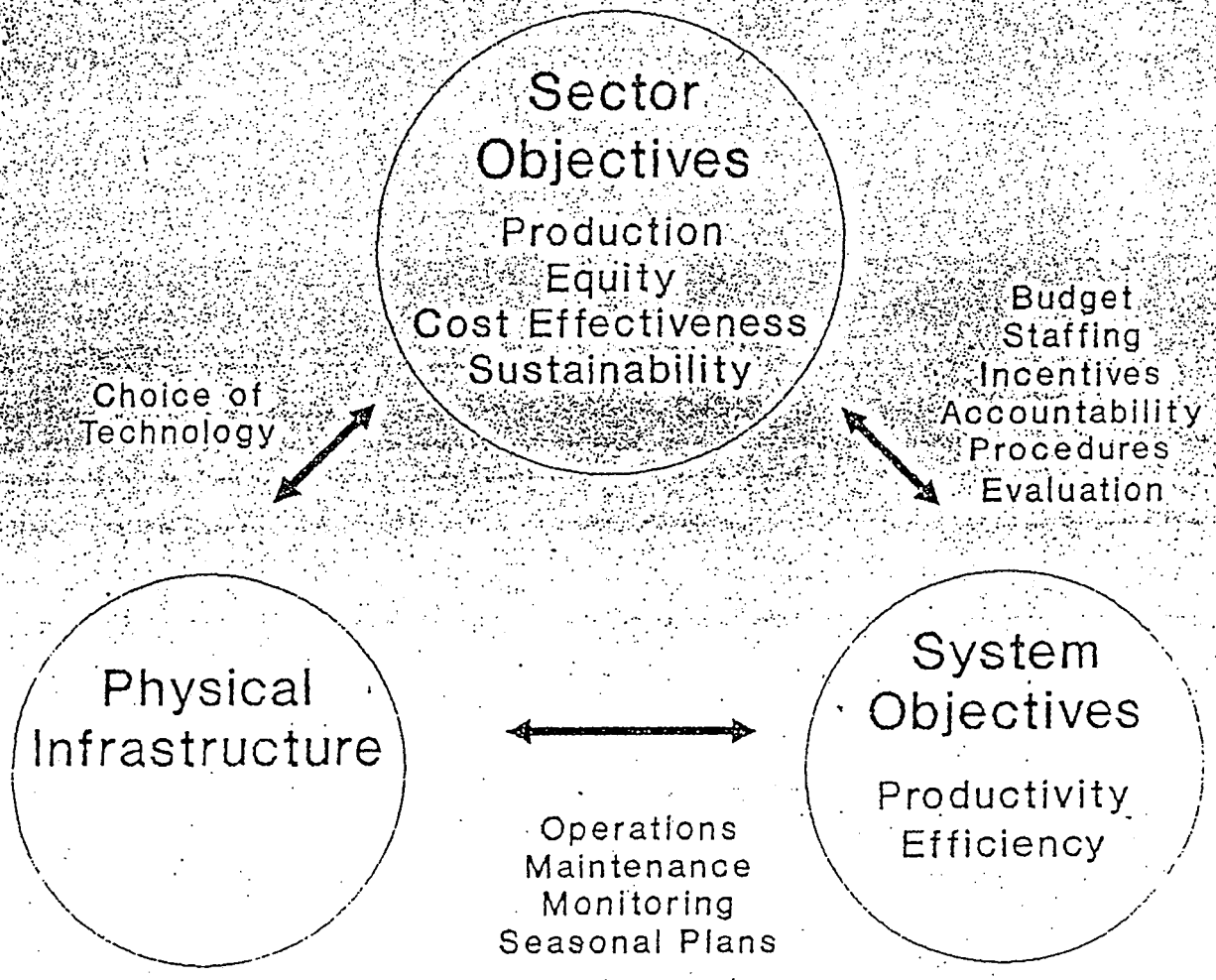
Primary Objective : EFFICIENCY

Rationale :
- State of National economies (debt servicing)
- Declining returns to rice monoculture (cost/income)
- Competition for natural resources
- Competition for investments between sectors

Secondary Objectives :
- WATER USE EFFICIENCY (declining resources → Yield/volume)
- WATER DISTRIBUTION EFFICIENCY (more beneficiaries)
- ECONOMIC EFFICIENCY (reduced subsidies)
- INSTITUTIONAL EFFICIENCY (declining recurrent budget)
- FINANCIAL EFFICIENCY (returns to investment)

Strategies :
- Changed capital investment
- Resource Mobilization (ISF, etc)
- Cost Reduction (Turnover, Joint Mgt)

Consequences :
- "Sector" lending policies



Framework for Irrigation Management

(a) Changed Capital Investment

Before :
- High Performance Expectation
- Expansion of irrigated area
- No finite investment limit / ha

"HOW MUCH WILL IT COST"

After :
- Consolidation on existing areas (rehabilitation / modernization)
- Revision of performance expectation
- Recognition of management deficit

"HOW MUCH CAN WE AFFORD"

Issue : Design — Management Interaction :

Systems designed for high levels of performance are generally more expensive and more complex, and thus require higher management inputs. Low levels of management in such systems may result in lower levels of performance than in simpler systems that require more modest management inputs.

Can policy makers justify high investments that carry with them the risk of lower overall performance if they do not first deal with the management capacities of the line agencies involved.

(b) Resource Mobilization

Main objective: Financial support of O&M division of irrigation agency through payments by farmers.

By paying, farmers can expect a certain return in terms of access to water and quality of service they receive.

Issues:

Do farmers gain a say in the financial operation of the system because they are supporting the agency staff and, implicitly, their overall efficiency?

Do farmers gain a right to a contract that allows them the right to refuse payment if the level of water supplies or the quality of service is perceived as inadequate?

If some objectives extend beyond the boundaries of an individual system, is it fair to expect 100% recovery of O&M costs? If not, on what basis can the relative proportions of fees vs. external contribution be based?

(c) Turnover / Joint Management

Objective : to reduce O&M costs of the irrigation agency by transfer of all or partial responsibility of O&M costs to farmers.

Issues :

How do government agencies cope with the implicit reduction in establishment (of field staff) following turnover ?

What levels of continued agency support and assistance to turned-over systems are required?

How is such long-term support and assistance to be financed.

ANNEX 8

by Rudolph Cleveringa

DEFINITION:

MANAGEMENT IS THE:

- ARRANGED RENEWAL
- PROCESS OF
- DESIGNING AND CONTROLLING
  - OBJECTIVE-ORIENTED
  - SOCIO-TECHNICAL
- SYSTEMS
- IN CONFORMITY WITH THE
  - CONTEXTUAL SITUATION
  - AND CONDITIONS.

DESIGNING: THOSE ACTIVITIES OF INSTITUTIONS AND INDIVIDUALS AIMED AT

- CREATING A SOCIO-TECHNICAL SYSTEM AND
- SUSTAINING ITS LONG-TERM VIABILITY.

CONTROLLING: DENOTES THE ABILITY OF MANAGEMENT TO

- INFLUENCE THE SYSTEM IN SUCH A WAY THAT IT ASSUMES A
- DESIRED STATE ACHIEVING SET OBJECTIVES.

EXAMPLES OF DECISIONS IN THE MANAGEMENT FUNCTIONS

PLANNING

What are the organization's long-term objectives?
What strategies will best achieve these objectives?
What should our short-term objectives be?
How to account for goals of individuals?

ORGANIZING

How much centralization should there be in the organization?
How should jobs be designed?
Who is best qualified to fill a specific job vacancy?
When should the organization implement a different structure?

LEADING

How do I handle a group of employees who appear to be low in motivation?
What's the most effective leadership style for a given situation?
How will a specific change affect worker productivity?
When is the right time to stimulate or open up conflicts (if culturally appropriate)?

CONTROLLING

What activities in the organization need to be controlled?
How should these activities be controlled?
When is a performance deviation significant?
When is the organization performing effectively?

Table 1: Status of Irrigation Systems

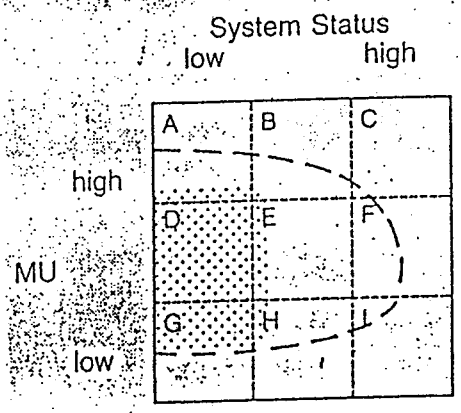
low	System status (SS)	high
● small total irrigated/ irrigable area ● small number of water users ● small number of levels of operation (number of points of water control between water source and the fields) ● production objectives with strong orientation towards basic needs and risk minimization aspects ● high flexibility and divisibility of technology		● large total irrigated/ irrigable area ● large number of water users ● large number of levels of operation ● production objectives with strong orientation towards commercialization, i.e. towards demands from national or international markets ● limited flexibility and divisibility of technology

Table 2: Management Uncertainty (MU)

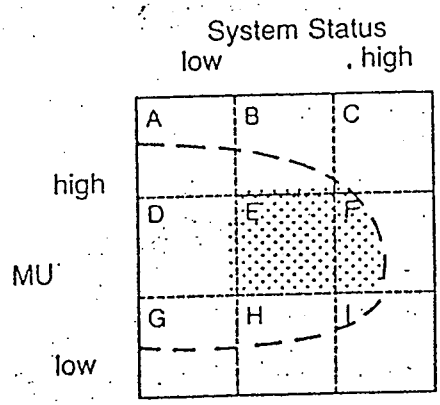
low ← Management uncertainty (MU) → high	
● high irrigation tradition of water users and/or authority ● low complexity of system environment ● low dynamics of system environment ● low dependence of system on environment ● reliable availability of resources ● low potential for goal conflicts ● low discrepancy between demands on capabilities of water users/water authority and their actual performance potenial	● low irrigation tradition of water users and/or water authority ● high complexity of system environment ● high dynamics of system environment ● high dependence of system on environment ● unreliable availability of resources ● high potential for goal conflicts ● high discrepancy between demands on capabilities of water users/water authority and their actual performance potential

Figure 3: Four Situation Types as a Basis for the Definition of Management-Specific Project Concepts

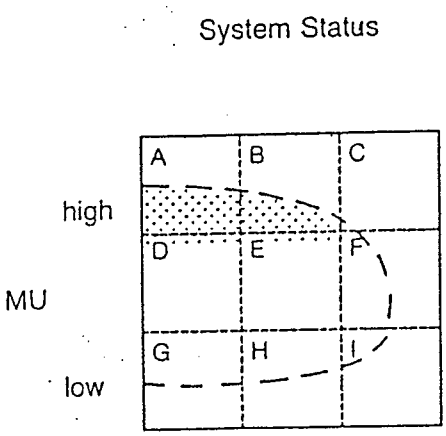
Situation Type 1:
Systems with water user management responsibility (water user projects)



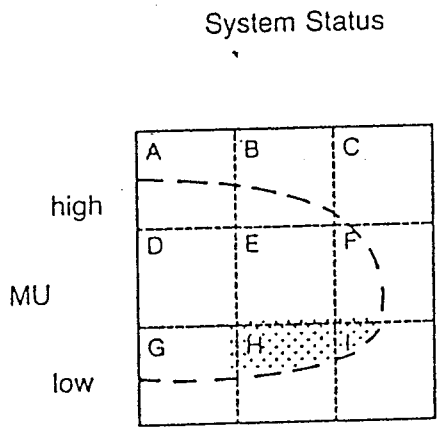
Situation Type 2:
Systems with split management responsibility (agency-user projects)



Situation Type 3:
System with open management responsibility (open irrigation projects)

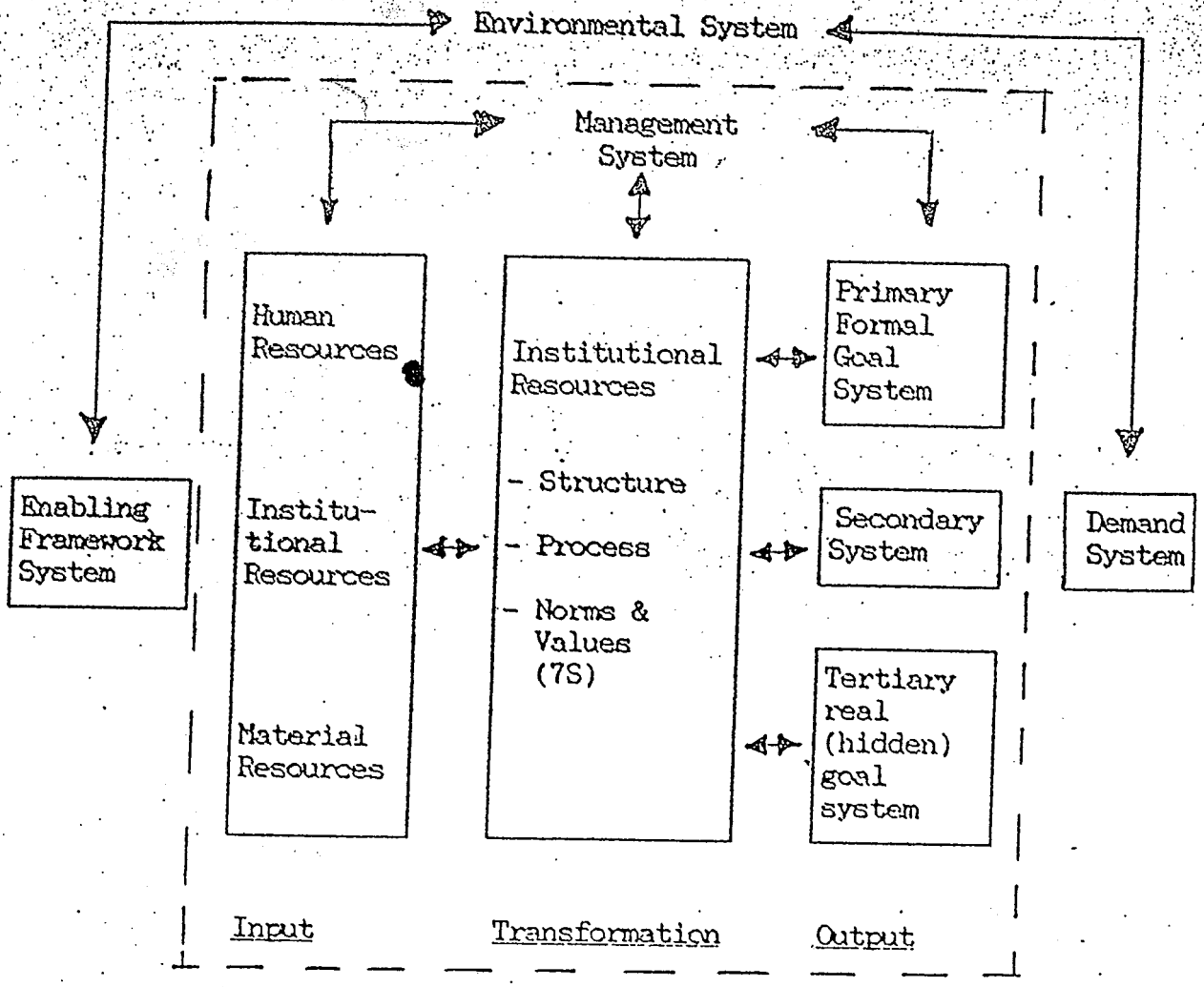


Situation Type 4:
Technical irrigation component projects (TIC projects)

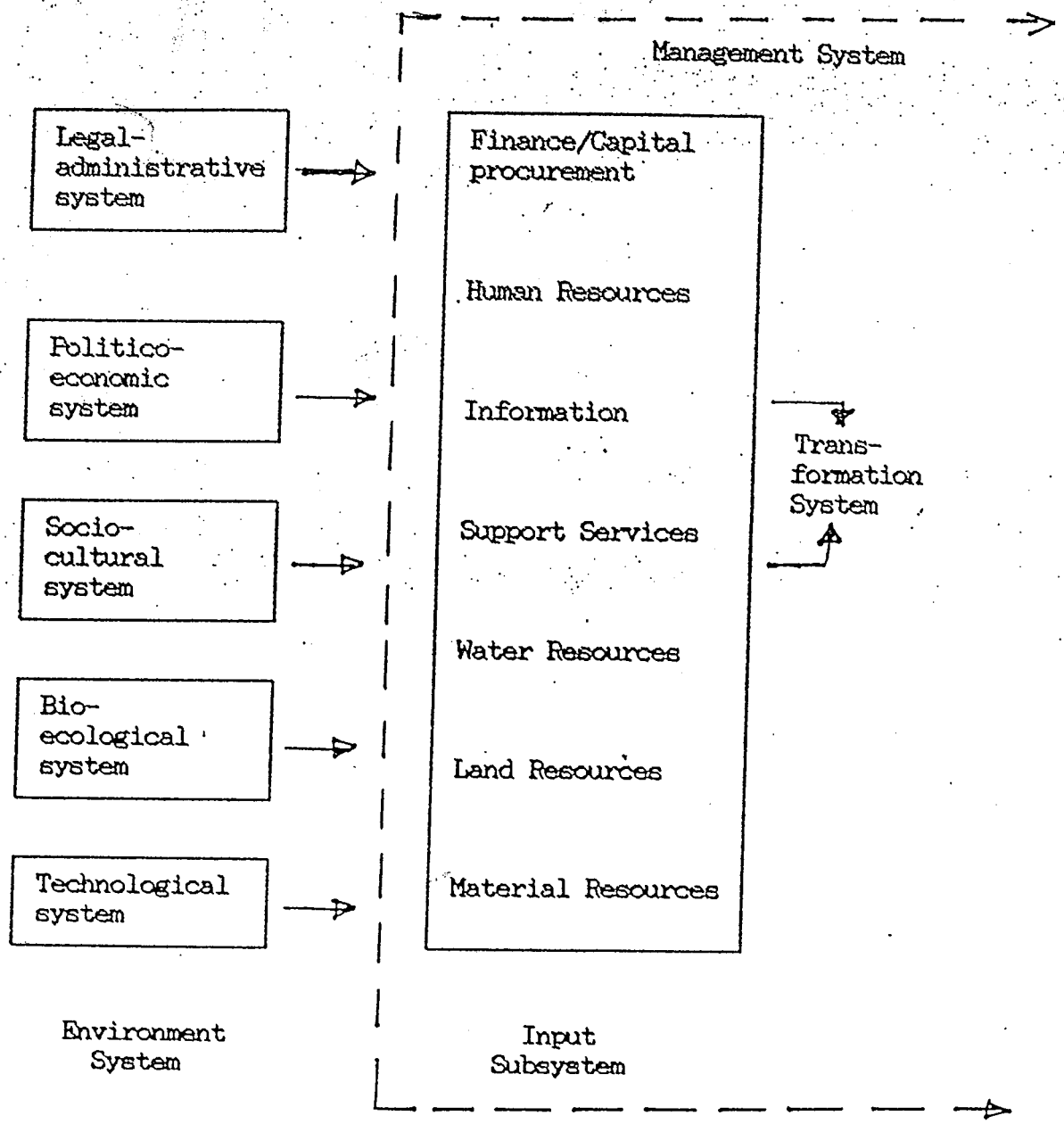


Source: Huppert and Walker (1988) based on Huppert (1986)

OVERALL SYSTEM OF AN IRRIGATION ORGANIZATION

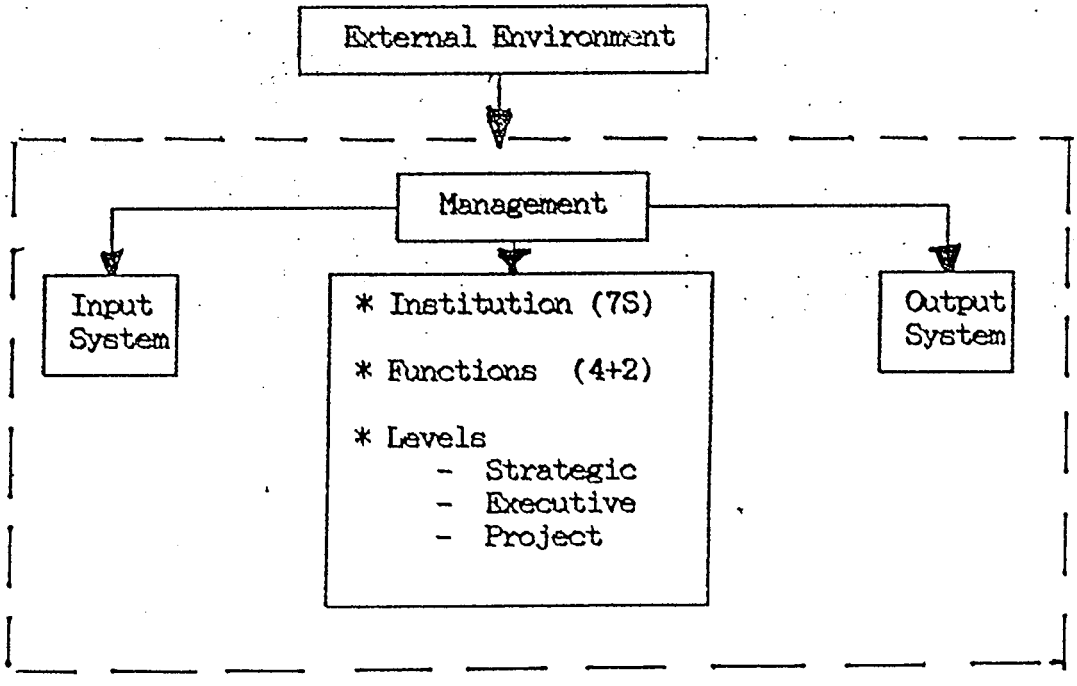


INPUT SUBSYSTEM OF AN IRRIGATION ORGANIZATION

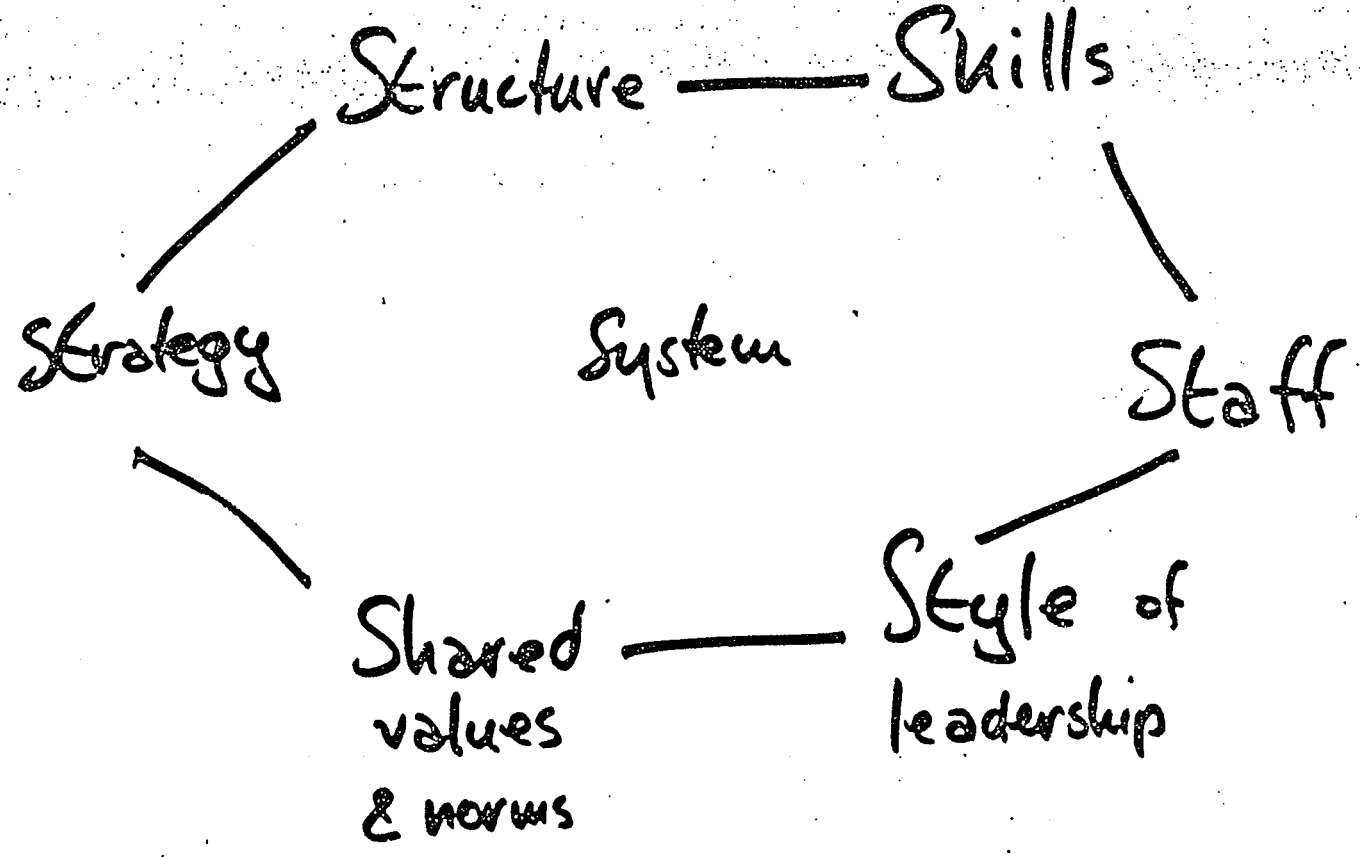


TRANSFORMATION

SUBSYSTEM



Mc Kinsey's 7S's Attributes of an Organization



GROUP A - 16.11.90

THREATS

(1) Physical

- population pressure)
- urban development) caused
- deforestation) siltation
- salinity) lack of
- * water logging) water
- * iron toxicity) supply
- * competition of water user)

(2) Socio-Economic

- economic competition - Malaysia, Thailand

  income opportunities
  skilled labour shortages

- changed priorities of development from agriculture to industry, tourism

- institutional weaknesses - not performance oriented

(3) Financial

- lack of funds for maintenance (mainly)

  * miss priority

- inadequate incentives (glamour) for maintaining programmes (compared to new ones)

- poor return on investment (monocropping)

(4) Biological/environmental

- pollution from effluent of industries, residuals from fertilizers

- aquatic weeds

- water related diseases

- degradation of soils

GROUP B

Threats	M & E Criteria (Indicators)		External + farmer accountability "Openness" Internal Procedure
I. Physical factors:	Cropping intensity; Yield Q-at source Condition on Irri. facilities Land-use change (conversion)	Groundwater Tables Areas	w/in Irrigation agency Reporting system Periodic walk-thru.
II. Socio-econ:	Farm income; Mortality & Morbidity Rates Activeness of FOrg Competition of Use (Water)	(Priorities)	Periodic survey by Irrigation Agency and other Govt. agencies like Stat. Bu. and DA.
III. Financial:	O&M Budget; Financial Autonomy of Irrigation Agency Farm Income; Timely release of Budget	(Subsidies)	Central-Provincial-District (Budgeting Procedure)
IV. Biological:	Water Quality; Watershed Condition		Periodic Survey by Irrigation Agency & Dept. of ENR.
V. Political/ Policy	ISF related policies land-use conversion related		- position papers by Agency - involving farmer leaders (convinced) - Sector reviews by Donors and National Boards

Legal Arrangements

(Abrupt) Changes in established policies

Quality Standards/Legal Status

GROUP B

Participants:

Dr. Apichart Anukularmphai (Rapporteur)
Mr. Arom Khumkomgool
Mr. Godoy N Alcasid
Drs. Birong Tambunan
Dr. Rudolph Cleveringa
Dr. Alfredo Valera
Dr. Hammond Murray-Rust
Mr. Charles Abernethy

Favorable Conditions

-Relative water scarcity (or excess)

Farmers as sources of income to agency

Service based Charges (how much still open)

Ensure up-standard services

Influence and supportive political environment

Education/Awareness/Sensitizing of Politicians/Policy-makers

Institutional Change:
- attitudes of Agency (staff)
- Structure of Agency
- Definition of Agency responsibilities
- Farmer Assoc. WUA's/P_3A, etc.

Donor pressure

Communication

Pressure from farmers on Agencies

Tax vs. Betterment vs. Service Fees

Create demand first prior to system investments

Sri Lanka: Demand driven Irr.

Set conditions first
--contracts

--agreements

THEME : Shift from "Supply-Agency-based" Irrigation to Apichart
Demand-Farmer/Service based Irrigation Charles

Question: Favorable conditions to enable this shift

[If systems would perform up to standards, countries would "drown" in rice excess capacity since late - 70's.]

as is:	as should be:	observation:
Agency sets standards for production for farmers - infrastructure - water delivery - cropping choice pattern	Farmers should set their demands/ needs themselves market regulates demand-diversities	Water as public-good vs. market-relative water scarcity (water excess)

GROUP A

Participants:

Ms. Aminah Mohamed Nawi
Mr. Poonsup Piyaanant
Mr. Tophone Vachanasvasti
Dr. Jose A Galvez (Joe)
Mr. Librado F. Quitoriano
Mr. Ir. Martono
Dr. Doug Merrey
Dr. Zenete Franca
Dr. Hilmy Sally
Mr. Franz Heim

	For	Against
1)	Government policy for farmers on participation for small scale organization schemes.	Conditions (physical) non-conducive.
2)	Contract farmer agro-based industries.	Other crops and msky? More intensive - less time for non-farm jobs.
3)	Diversification provision for support on diversification	Lack of credit.
4)	Better/efficient utilization of resources especially land and water.	Weak farmers organizations, mismanagement skills (low) poor linkages between organizations and farmers.

BRIEF EVALUATION OF THE WORKSHOP

The aim of the workshop was to provide an opportunity for policy makers to:

(i) examine the experience gained in the region, and

(ii) discuss with their colleagues from other countries policies and trends in irrigated agriculture

(A) How do you rate the achievement of this aim?

	1	2	3	4	5	
Very good	5	5				not at all

(B) How do you rate the relevance of the four major issues presented and discussed?

	extremely				not at all
	1	2	3	4	5
a) The systems approach (Thursday)	2	8			
b) Trends and policies (Thursday)	6	3	1		
c) Sustainability and monitoring (Friday)	4	5	1		
d) Performance and cost recovery (Sunday)	5	3	2		

(C) Do you think that the excursion could provide you with some new ideas on water users organization, agency-farmer relationship and cost recovery?

Yes	10	it is a good venue
No	01	there is not enough time to evaluate the system

(D) Other comments/recommendations:

- program schedule is a bit too tight
- follow-up workshop with the same participants would be desirable
- there should be a follow-up of this workshop
- more emphasis should be given to marketing and post-harvest facilities aspects
- thanks a lot for the opportunity and hope that we can have the same opportunity in the future
- very good.

Democratic Socialist Republic
of
Sri Lanka

Ministry of Lands, Irrigation
&
Mahaveli Development

Irrigation Systems Management Project

The Farmer Organization Program
A Summary of Major Activities.

Sheladia Associates Inc.
Technical Assistance Team to ISMP
Polonnaruwa.

THE FARMER ORGANIZATION PROGRAM IN ISMP.

1. INTRODUCTION.

1.1 Irrigation Systems of the ISMP.

The Schemes in the Irrigation Systems Management Project funded by USAID the extents originally designed and the area actually cultivated are in Table 1-1.

Table 1-1. THE EXPANSION OF THE IRRIGABLE AREA IN FIVE IRRIGATION SYSTEMS OF ISMP.

Scheme	Originally Designed Acreage.	Actually Irrigated Acreage	Increase Acreage	% Increase
PSS	19632	25000	5368	27.3
Giritale	6192	7500	1308	21.1
Minneriya	13434	22000	8566	63.7
Kaudulla	10556	12000	1444	13.6
RBE (K,gala)	5600	7000	1400	25.0
Totals & Av.	55414	73500	18086	32.6

The originally designed acreage in the 5 schemes was 55414 acres. At present the total area irrigated has risen to 73500 an increase of 18086 acres or 32.6 %. The Minneriya scheme has the highest percentage of increase of irrigated land with 63.7 % increase.

2. FARMER ORGANIZATION CONCEPTS.

i. The bottom up approach with ideas, designs, plans, strategies emerging from the grass roots.

ii. The formation of farmer organizations based on hydrological boundaries.

iii. The catalyst designated Institutional Organizer(IO) facilitated, and promoted farmer organizations at all levels.

iv. The Team Concept in ISMP is an important feature of the Farmer Organization Program.

v. The federation of farmer organizations at the field canal,distributary and Project levels.

vi. A new concept that was introduced in the ISMP was that all levels of the organization should be non political.

3.THE IMPACT OF FARMER ORGANIZATIONS IN ISMP.

3.1 Details of FC Groups.

Table 3-1. EXTENT OF THE FCG AREA AND THE NUMBER OF FARMERS IN ISMP SYSTEMS OF ISMP.

System/Project	Extent Acres	Farmers (Approx)	FCGs (No)	Extent Per FCG	Farmers Per FCG
PSS	25000	6400	226	110.6	28.3
Giritale	7500	1860	142	52.8	13.0
Minneriya	22000	4600	258	85.3	17.8
Kaudulla	12000	6000	365	32.8	11.8
RBE (K,gala)	7000	2000	200	35.0	16.4
Gal Oya LB	65000	20000	537	121.0	37.2
Total & Av:	138500	40860	1728	63.7	29.1

Source: Impact Survey, 1989 and Project Managers.

There are approximately 2000 field canals in the 7 systems of the ISMP, with a total of 1728 Field Canal Groups. There are instances where two or three small FCs have joined together to form one FC Group. The extend of the Field Canal Group varies in each System.

3.1.1. Major Activities of FC Groups.

- Operation of the Field Canal
- Maintenance of the Field Canal
- Conflict Resolution
- Basic Agricultural Planning Unit
- Social/cultural Activities.

4. DISTRIBUTARY CANAL ORGANIZATION

4.1. Summary of Major Activities:

- Operation of the FCs and DCs
- Maintenance of the FCs and DCs
- Resolving problems and conflicts
- Agricultural Development Planning
- Liaison and coordination with Government agencies.
- Promotion of youth organizations
- Promotion of Women's organizations
- Self Employment projects.,
- Income generating activities,
- Social and cultural activities.

4.2 Current Status .

The status of farmer organizations up to the Third Quarter 1990 in all three districts is given in Table 4-1.

Table 4-1. STATUS OF FARMER ORGANIZATIONS IN THE ISMP SCHEMES UP TO 3 RD QUARTER 1990.

Irrigation Scheme	IOs	FCGs	DCOs	Area Council	PFO
PSS	24	226	26	4	Ø
Giritale	11	142	12	Ø	Ø
Minneriya	21	258	18	Ø	1
Kaudulla	24	365	22	Ø	Ø
RBE (Kurunegala)	7	200	11	Ø	Ø
Gal Oya LB	10	537	52	4	1
Total:	97	1728	141	8	2

There are 1728 Field Canal Groups with an equivalent number of Farmer Representatives in 6 Irrigation systems of the ISMP.

4.3 Major Activities.

4.3.1.. Water Distribution by DCOs.

The water distribution activities of DCOs includes, coordination of water distribution among field canals, organizing and implementing water distribution schedules in collaboration with ID, supervising the work of Water Managers and Irrigators and resolving water problems referred by FCGs. With the taking over of the DCs by DCOs which is presently under way, this activity will become even more important.

4.3.2. Maintenance Work of DCOs.

After action was initiated by the Government to hand over the distributary canals to DCOs in early 1989 ,maintenance of the distributary canals has become a major responsibiliy.

4.3.3. Registration of DCOs.

The registration status of DCOs up to the third quarter of 1990 given in Table 4-2.

Table 4-2. STATUS OF FARMER ORGANIZATIONS AND REGISTRATION UPTO THIRD QUARTER 1990.

System	FCGs	DCOs	Registered with DDID	Registered with IMD
PSS	226	26	24	0
Giritale	142	12	6	0
Minneriya	258	18	17	16
Kaudulla	365	22	22	13
RBE,(K,gala)	200	11	11	7
Gal Oya LB	537	52	52	31
Total:	1728	141	132	67

* As of the third Quarter 1990.

Registration of DCOs with IMD is a positive step towards legal recognition of the FOs. The fact that registration is strict and has to be earned by the DCO demonstrating its strength and viability makes it a symbol of government acceptance of the organization.

4.3.4. Taking Over of Distributary Canals.

In accordance with the policy of participatory management, there has been much progress in the taking over of distributary canals by the DCOs. Details of take over of distributary canals and the present status is given in Table 4-3 below.

Table 4-3. TAKING OVER OF DISTRIBUTARY CANALS BY DCOS.UPTO 3 RD QUARTER 1990.

System	DCOs	Total DCs	DCsTaken Over by DCOs Up to end 3 Qr,90.	DCs to be Taken Over
PSS	26	74	55	19
Giritale	12	28	28	nil
Minneriya	18	45	45	nil
Kaudulla	22	42	42	nil
RBE	10	37	11	26
Gal Oya LB	52	NA	NA	NA
Total:	87	226	181	45

4.3.5. Contract Work of DCOs.

Contract work refers to ESI, PR and maintenance activities undertaken by DCOs from the ID. The total value of the contracts undertaken by DCO upto the third quarter 1990 is shown in Table 4-4.

Table 4-4. CONTRACT WORK UNDERTAKEN BY DCOS UP TO 3 RD QUARTER 1990.

System	No	VALUE OF CONTRACTS, ESI	PR	Maintain. Rupees.
PSS	2	144,594		144,594
Giritale	3	273,698		273,698
Minneriya	13	1,564,594		1,564,594
Kaudulla	16	1,133,314	21,300	1,154,614
RBE	NA	NA	232,476	232,476
Gal Oya LB	15	NA	904,650	904,650
Total:	49	3,116,200	1,158,426	4,274,626

4.3.6. Shramadana Activities of Farmer organizations.

"Shramadana " - donation of voluntary labour - is an old,widely accepted social institution, which has come into prominence in recent years. The organization of people for shramadana particularly for construction of roads, communal facilities and maintenance of irrigation canals is an important activity of the DCO. Details of Shramadana activities undertaken by DCOs in the second and third quarters of 1990 are given in Table 4-5.

SHRAMADANA ACTIVITIES OF DCOS AND VALUE OF SHRAMDANA UPTO THE THIRD QUARTER OF 1990

System	Shramadana Activtiees 1	2	3	4	5	6*	Total	Value RS/-
PSS	85	3871	-	-	-	-	3956	197,800
Giritale	110	1030	-	-	-	-	1140	57,000
Minneriya	584	7765	32	-	-	-	8381	419,050
Kaudulla	3534	2453	125	-	469	-	6581	329,050
RBE(K,gala)	-	593	-	-	-	-	593	29,650
Gal Oya LB	444	707				55	1206	60,300
Total:	4313	15549	157		469	55	21857	1,092,850

* Code: 1 = Road Construction, 2 = Irrigation canals
3 = Community Buildings, 4 = Play Ground,
5 = Work in Temple, 6 = Others
** Value of one man day = Rs 50/-.

4.3.7. Crop Diversification.

The crop diversification activities of the ISMP was intensified by the interest and initiative taken by many DCOs, with the help and support of the SAI Agronomist. The DCOs engaged in crop diversification activities and the extent cultivated up to the third quarter of 1990 are given n Table 4-6.

Table 4-6. CROP DIVERSIFICATION -EXTENT CULTIVATED UP TO THE THIRD QUARTER 1990.

System	No of DCOs	Acreage
PSS	26	849
Giritale	5	240
Minneriya	18	923
Kaudulla	22	200
RBE	4	847
Total:	75	3059

The actual extent may even be higher as small scale cultivations were not recorded. The crops cultivated are Mung Beans, Cow Pea, Big Onions, Chilies and vegetables.

4.3.8.. Youth Organizations and Women Organizations.

The most exciting and perhaps the most promising innovation introduced to the Farmer Organization Program, is the formation of (a) Youth Organizations and (b) Women Organization under the umbrella of the DCO. Youth and women within the DCO area are motivated to form parallel organizations sponsored,supported and guided by the DCO. Please see Organization Chart.

4.3.9. Development Fund.

From the last quarter of 1989, several DCOs commenced the organization of a Development Fund. The primary objective is to build up a Fund for development activities of the DCO, and to help member farmers in times of distress. It is in a way a Revolving Fund, with borrowers paying back their loans with a small interest, which is ploughed back to the Fund. The total collection of the Development Fund up to the third quarter 1990 are in Table 4-7.

Table 4-7. DCO DEVELOPMENT FUND UP TO THIRD QUARTER 1990.

System	No of DCOs	Dev.Fund(Rs)
PSS	5	200,000
Giritale	10	118,000
Minneriya	13	56,451
Kaudulla	22	103,558
RBE(K,gala)	6	21,566
Gal Oya LB	5	30,000
Total:	61	529,575

The total amount of the Development Fund as at end of third quarter of 1990 was 529,575/-. In terms of the interest and enthusiasm of the DCOs it is expected that the Fund will grow rapidly with time.

4.3.10. Mortgage Release Projects.

In the Polonnaruwa Schemes,it is estimated that about 30 % of the land is mortgaged out. The initiative in the release of the mortgages was pioneered by the Hathamune DCO in the Minneriya Scheme in 1988 with the close collaboration of the Colonization Officer of the Minneriya Scheme and the active support of the Government Agent, Polonnaruwa.

Since then many other DCOs in other Schemes have taken on mortgage release as a priority project and it is expected that mortgages of most of the land will be released in the next few years. The details of mortgages released up to the third quarter of 1990 is given in Table 4-8.

Table 4-8. DETAILS OF MORTGAGE RELEASE PROJECTS UP TO THIRD QUARTER,1990.

System	DCOs Involved.	Acreage Released (approx)	Amount of Mortgage in Rs/-
PSS	nil		nil
Giritale	3	11	88,350.00
Minneriya	4	183	1,030,000.00
Kaudulla	0		NA
RBE	2	4	20,000.00
Total:	9	198	1,138,350.00

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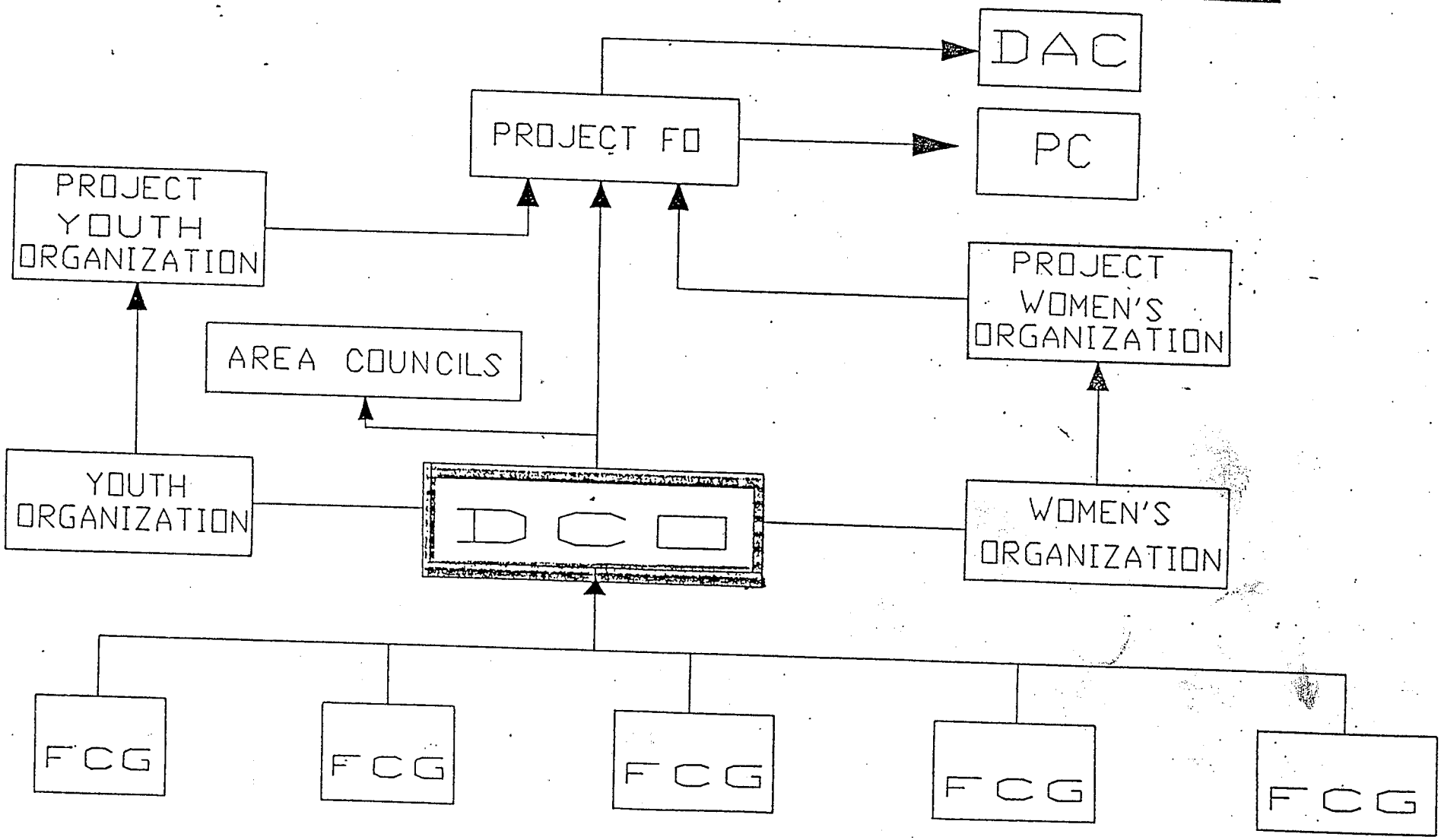
FARMER ORGANIZATION STRUCTURE



Irrigation Watermanagement and the Role of the Local Government:

Experience during the recent Introduction of Irrigation Service Fees (ISF) in Indonesia.

by Drs. B.S. Tambunan SE 1). *November 1990*

Introduction

Like in many other ~~nations~~ countries, Operation and Maintenance (O&M) of irrigation facilities over the years has been problematic in Indonesia. The focus on development of the irrigation resources resulted in a neglect of properly operating and maintaining the developed systems. The 1987 O&M Policy included next to upgrading of facilities and overall O&M capacity, the introduction of an Irrigation Service Fee (ISF) as a way of obtaining direct cost recovery from irrigation beneficiaries. Part of the O&M effort was changing the institutional structure of O&M by putting responsibilities at a lower level, the District. This brought the Ministry of Home Affairs as a partner of the Ministry of Public Works into establishing the more decentralized O&M Institutional structure, with O&M being the responsibility of the Provincial and Local (District) Government.

The introduction of an Irrigation Service Fee in 1989 in Indonesia as a cost recovery mechanism for O&M costs has been structured such that it is experienced as a service by water users. And, being a service, the procedures established around the ISF allow for significant user input in O&M and its procedures, into the cost of O&M and the resulting fee magnitude, into how and where the fund are used.

The basis of ISF is that when the service agreed is delivered, the user is obliged to pay. This is recorded in an agreement. The model introduced also differentiates between service levels on irrigation, on drainage and on tertiary development. The service is provided to the tertiary unit, with water user associations in charge of subsequent distribution. ISF is thus a fee for main system management, strongly linking main system and on-farm levels in water management.

---

1) Director, Directorate of Regional Finance, Directorate General of Public Administration and Regional Autonomy, Ministry of Home Affairs, Jakarta, Indonesia. The Irrigation Service Fee Project is a part of the World Bank funded Irrigation Sub-Sector Project, with the ISF project being implemented under Ministry of Home Affairs supervision by EUROCONSULT, the Netherlands, and Pusat Pemgembangan Agribisnis, Indonesia.

Water Management and the Role of the Local Government

The pilot introduction of ISF since 1989 has brought now, among others, four (4) issues simultaneously into focus as important areas for Local Government involvement:

a. successful introduction of ISF is correlated to integral resolving from the start **main system and tertiary on-farm water management** issues;

b. there is **a significant role for the Local Government** (from District to village officials) in achieving both this introduction and in improving water management agreements between groups of water user associations;

c. **user participation**, on essential issues and at essential times, in making the service agreement is a prerequisite to ISF and to water management; and,

d. the total process should be reflected in proper **financial and administrative measures**, spelling out the contribution of each (in **partnership** shares), and at which times this is required. This includes the establishment of this in the recurrent regional financial budgets, with the ISF paid by the system users as an integral part of the budget. Financial arrangement should be institutionally reflected in provincial budgets, with the target that ISF generates as close as possible to 100% of the real needs-based O&M costs.

Structure of Irrigation Service Fee

An important element in stimulating water management and equity in distribution and/or in payment for services recieved, has been the way the ISF fee structure has been designed.

In order to arrive at a cost basis, a plan of operation and maintenance is developed with the Local Government and the Water Users Associations. From this, a **needs-based budget** (NBB) is derived. This is divided by the net irrigated command area, being the potential system service area, to obtain a **Basic Flat Fee** (BFF) in Rupiah per hectare.

This BFF is corrected with an **introduction factor** (I) and a **service orientation factor** (SOF) to obtain the net ISF fee for the O&M cost. To this is added the **cost of collection** (CC) on a per hectare basis. The fee is charged to the area planted. Differences between the area planted and the area harvested will give occasion to request for (partial) exemption of ISF.

In a tariff formula, the ISF fee is calculated as

ISF fee = I . SOF. BFF + CC

The factor I has a value of 50% in the first year of introduction, increasing to 100 % after 5 years. The factor SOF reflects the services recieved per tertiary unit. In formula,

SOF = SLI. SLD. SLT. Sn. CIF. WSF

where :

SLI	=	Service level Irrigation (4 levels - range 0.65 to 1),
SLD	=	Service Level Drainage (2 levels - 0.8 or 1.0)
SLT	=	Service Level Tertiary Development (2 levels - 0.8 or 1.0)
Sn	=	Season factor (depending on seasons, and service requirement of season for yearly value of 1.0)
CIF	=	Cropping Intensity factor (results versus planning in %)
WSF	=	Water Security Factor (3 levels).

The ISF fee is thus **area-based** and is corrected for **system service levels** and for the service actual delivered. The service levels below level 1 stimulate the Government to improve these so that the full fee can be asked.

The ISF fee is described in a **service agreement** on a system basis, which includes **routine water user (customer) feedback** on the plan for O&M (POM) through timely and structured **system walk-throughs**, an agreement on the associated system O&M budget, with the agreement identifying the service levels in irrigation, drainage and tertiary development. With service levels still below certain required standards, users pay somewhere between 35 and 70% of the O&M costs, while the Government shoulders the remainder in what is called **"Partnership"**.

The ISF mechanism is one structured around **Water User Associations**, which are the main vehicle in service preparation and in collection. ISF is a fee for main system management, with a payment request issued to the tertiary unit and the corresponding water users association.

The ISF procedures are organized around what is called **the service cycle**, which has an introduction period to the Local Government and Water Users Associations, a yearly service preparation period (in which the POM and budgets are made and the fee is calculated), the actual service implementation, and an assessment of the service after each year. At this time, accountability for the most recent service year and its achievements is made.

Institutional Structure and Development at Central and Provincial Level

The ISF procedures clarify roles in irrigation water management, while responsibilities and rights are specified. The "rules of the game" are redefined. The actions in ISF allow for learning; the introduction factor in the fee is one such element which allows for a slow build-up in fee, while the parties in the ISF service become familiar with each other, and learn to trust each other in providing service and accepting this.

The role of the Central level and its agencies is to delegate and coordinate the policy of decentralization to the provincial agencies. Central level agencies in ISF are the Directorate of Public Admninistration and Regional Autonomy in Home Affiars (as the agency supervising provincial and local district government, in charge of O&M issues), the Directorate General of Water Resources Development (DGWRD) in Public Works, and the National Planning Agency, Bappenas, in overall monitoring and coordination between agencies.

At the provincial level, the Provincial Planning agency (Bappeda I) is charged with ISF policy implementation towards the Districts, the Provincial irrigation Service (PRIS) is charged with creating improved service levels in the systems as well as with supervising actual service, while the Provincial Revenue Office (Dipenda I) is the collection supervisor, and in charge of monitoring shortfall, partnership needs, and accounting.

Involvement and Role of Local Government in ISF.

The first years results have shown that ISF is more than just cost recovery. It is seen as an instrument by all concerned at the Local level to resolve water management issues, to allow for user input into the irrigation service, being **water allocation and distribution, system maintenance, conflict management and resolution, and financial management.** The ISF tariff structure forces the Government to upgrade service level to be able to ask for the full fee. Difference in fee in a system are not only based on difference in service level, but also on difference in water management results. If the upstream sections in a system achieve a higher cropping intensity, the users there pay more ISF.

Institutional issues is ISF are many, and complex, but have so far been very positive. Firstly, at the Local Government level, there is an increased role for the **District Irrigation Office.** They will recive a much large responisbility, and as such require more improved means to do therir job. At the Local Government level, the **District Head** (Bupati) in his role of Chairman of District Irrigation Committee (and assisted by Sub-District and Village heads) has been the correct authority to balance the ISF introduction between water users and Irrigation agency personnel. This is in line with present policies of decentralizing management of rural development, especially with respect to

general O&M matters in various sectors. Campaigns on giving information on ISF through the **Local Government Planning Office** has been experienced by water users as allowing for their input, and its acceptance. Also, the role of the Local Government in collection through the **District Revenue Office** which monitors the ISF collection among Water users Associations, is significant for ISF acceptance. Finally, where Water User Associations are weak, village heads assist in setting these up, while stimulating for collection by committee of users associations. The role of the **Local Government below the District level** in setting up Water Users Associations and Sub-Federations and Federations at sub-system and system levels is very important; though future leaders are selected by the water users, during the familiarization period, the process is guided by the LOcal Government, especially in establishing the Legal Framework of Rules and Regulations of Water Users Associations. Clearly, the Local Government functions as the service overseer, the facilitator, the arbitrator at times of service problems. Recent problems in ISF collection in an East Java pilot area, when sugarcane was not harvested by the factory and farmers initially refused to pay the ISF, has shown that quick action by the Local Government can resolve this and maintain the willingness to pay.

Role of Water Users Associations in ISF

Water User Associations (WUAs) on tertiary hydrological basis (except for East Java desa based WUAs) play the key role in ISF, greatly affecting water management in a positive way. In Central Java, WUAs in ISF areas now move from desa to a tertiary base.

Through the ISF procedures (especially system walk-through), they provide feedback on the service as informers to the Local Government and the service providers.

They register their own members and the land. They divide the water delivered to the tertiary gate, for which they pay an service fee, assuring that water reaches the land of all, as when not, no fee will be paid by those dissatisfied.

They make the list of planted area, and subsequent they correct this for actual harvested area. They collect the fee for the WUA members, and account for funds.

They discuss cropping schedule and required discipline at service preparation. At collection, they request exemption, they enforce internal payment, they account for fee collected within the tertiary block, they deposit into their own account at village bank.

They are structured into Gabungans (groups) of WUAs, which again are formed into a Federation on a system basis. Within a Gabungan, WUAs discuss water management issues, as well as between Gabungans, in case service is undesired

inequitable.

In the ISF SIDRAP pilot area of 14,700 ha, 185 tertiary units were organized into 142 WUAs, which were organized into 16 Gabungan WUAS with 16 gate keepers (juru) and 16 ISF water management control points along the main system. Each Gabungan WUA here has one collector assigned from the Revenue office at sub-district (camat) level; this provides the triangle of gatekeeper - collctor -chairman of Gabungan WUA on service and on collection.

Finance of O&M

At present, funding of O&M is obtained from Provincial Revenue (APBD), but greatly supplemented from Central Level Development Budgets (APBN), as well as loan funds for EOM (efficient O&M).

Non-EOM areas receive around Rp 10,000 per hectare (US 6 per hectare), while EOM areas around Rp 25,000 per hectare (US 15 per hectare). Needs are around Rp 35,000 to 45,000 per hectare, with extremes of Rp 55,000 per hectare.

O&M funding is a Provincial Government responsibility, with ISF to become the funding source to replace the APBN and the Loan funding. These will be phased out of EOM areas over 5 years, equal to the Introduction period in the ISF tariff formula. ISF is to finance O&M to the maximum extent possible. Shortfalls due to low service levels and insufficient management results (differenece between what was planned and what was actually received) are to be funded from PBB, being a land tax for the irrigated areas.

Results sofar

Pilot introduction in about 8 systems, spread over the 4 major irrigation provinces of West, Central, East Java and South Sulawesi, with an pilot area covering a total of over 55,000 ha, has resulted in collection efficiencies ranging from 60 to 100 % of the requested first year fee, with an average of over 80%. Willingness to pay is high, if the service element is stressed, and when water users see action on their "customer" feedback to the Irrigation Service Agency at the District level. Ability to pay is generally acceptable as fees are presently around Rp 18,000 per ha (or US $ 10 per hectare) and will rise to about an average of 2 to 2.3 times this amount in 5 years (after introduction factor is phased out and service levels increase). In the next 4 years, plans exist to widen the ISF base to about 700,000 hectares more in 7 provinces - the present 4 plus West Sumatra, Lampung and Yogyakarta.

Issues in ISF

Issues in ISF with respect to large scale introduction in the next 4 years (1991-1994) during the second phase of the Irrigation Sub-Sector Project include:

a. generating the willingness and ability to collect,
b. institutionalization of early recognition and early actions on service problems,
c. integrating non-irrigation water use charges from system water sources,
d. assuring partnership funding and upgrading service levels,
e. rate of institutional absorption of the service concept by all concerned and associated training, and
f. structural adjustment of Institutional routines, and accepted specificity of roles and responsibility in irrigation water management.