PRE-REQUISITES AND STRATEGIES IN ESTABLISHMENT OF WATER USERS ASSOCIATIONS (WUAs)

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ABSTRACT

Crisis in freshwater resource and its scarcity has threatened sustainable development, environment, human safety and welfare in last decades, and called governments commitments for changes in approaches for establishment of participatory management on water and environment resources at all levels (Rio, 1992). Ninety two percent of available freshwater is currently used for agricultural production, and hence, participation of farmers in irrigation management and operation has been so far legislated and stressed in all National Development Plans. Organizing of farmers in community-based organizations plays important role in country's soil and water resources management. Instead of failure of governmental agencies in irrigation system operation and maintenance during last decades, suitable substitutions should be searched for reducing imposed burdens on government and for improved performance and management on water systems.

Three consultative workshops were held and participated by experienced managers and professionals to find the best formation for WUAs. Analytical Hierarchy Process (AHP) with Expert Choice Software was also applied whose results indicate that Guild Water Users Association (GWUAs) is legislatively the best organization to undertake operation and maintenance of irrigation system.

Irrigation Management Transfer initiative approved to be a real sample of farmer's participation in form of GWUAs in management and maintenance of irrigation system in Gazvin Plain. In this paper, challenges, opportunities, bottlenecks, achievements and weaknesses are discussed followed by certain remedial recommendations forwarded for improvement. Despite of rapid and complete establishment and good performance of GWUAs in irrigation management and maintenance of the network, however, lack of proper legislation and transparency in relation to governmental institutions would eventually induce many undesired conflicts and problems in future.

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FOREWORD:

Crisis in freshwater resource and its scarcity has threatened sustainable development, environment, human safety and welfare in last decades, and called governments commitments for changes in approaches for establishment of participatory management on water and environment resources at all levels (Rio, 1992). Need for a real participation of water users communities in irrigation management has explicitly been focused within the context of the2nd, 3rd and 4th National Development Plans. In fact, organization of real users' groups for sound utilization of water resources under well-structured organizations seems a crucial challenge whose success would seriously affect the national soil and water potentials. This paper grows up with: a brief description of general status of national water stocks; existing irrigation-drainage systems and their exploitation management; and the process undertaken for establishment and utilization of a sample community organization in a wide plain together with its modern irrigation-drainage networks and the challenges and opportunities that practitioners have so far encountered. At the end, there are certain key recommendations placed on critical issues for due discussion and investigation.

ALLOCATION OF HARVESTABLE WATER RESOURCES:

Consumption pattern of the total harvestable water shows an allocation of 8% for drinking and industrial purposes while the majority (92%) goes for agriculture sector. Regarding the establishment of relevant offices for water and sewage issues at urban and rural scales, there exists due supervision on drinking and industrial consumption, but no proper undertaking yet to become operational on agriculture water utilization.

EXISTING MANAGERIAL STATUS OF IRRIGATION-DRAINAGE SYSTEMS:

Of total (3.2 m.ha) irrigated lands, only 53% (1.7 m.ha) enjoy main canals (to conduct reservoir water to downstream plots), of which, 700,000 ha. possess lateral channels. Moreover, certain systems do seriously suffer deficiencies of due tertiary or quaternary channels within the farms. On the other hand, initiatives as optimization of water consumption, rising irrigation efficiency, and maintenance of existing networks could, in no way, be effective enough mainly due to inappropriate formulation and implementation of viable programmes for sound utilization of allocated water to the end users.

Even, the subsidiary channels have faced to numerous constraints partly due to lack of sound management on their regulatory exploitation and maintenance having led to extensive seepage of the surrounding lands. This aside, common challenges faced by many plains and water-tables should also be accounted at national scale.

PRACTICAL SOLUTION FOR MANAGEMENT OF IRRIGATION-DRAINAGE SYSTEMS:

Upon experiences, public governance proved improper mechanism for utilization and maintenance of water establishments, hence, need to be replaced by another initiative to launch an efficient management on the systems. The best approach would focus on capable organizations to replace the government leadership and to ensure a productive management in exploitation and distribution of water and maintenance of the whole system.

Certain countries, which have the same governmental management on irrigation-drainage networks, have confronted with similar consequences, too. Moving towards participatory management patterns as experienced in Turkey, Kyrgyzstan, India, Sri-Lanka, Mexico and many other countries in Asia or Europe, confirm and recognize outstanding achievements in this regard.

Optimization of water consumption and rising irrigation efficiency can be simply materialized through transferring the responsibility of agricultural irrigation and drainage system to the real users and beneficiaries. Participatory management has proved to take positive steps in development of infra-structural affairs and production of agri-crops.

WELL-ESTABLISHED ORGANIZATIONS FOR EXPLOITATION AND MAINTENANCE:

Based on the 2nd, 3rd and 4th National Development Plans, water users have to organize themselves under legal bodies for due realizing the following liabilities:

- Possessing executive capacities;
- Interacting with public institutions;
- Undertaking commitments or acquiring responsibilities from their members and staffs;
- Empowering for legal reaction against offenders and free-riders; and
- Regulating legal inter-relations between the members and legislative bodies.

To this end, and among the available initiatives and approaches, certain models, for instance, rural cooperatives, production cooperatives, guild water users associations (GWUAs), agricultural corporations and private and public shareholding enterprises were identified followed by describing and evaluating their functional commitments through technical debates on SWOT aspects conducted by professionals in two consultative workshops. Meanwhile, "The Executive Committee for Optimization of Agricultural Water Consumption" entrusted the Dept. of Extension and Farming System[1] (in the Ministry of Jihad-e-Agriculture) for designing a viable pattern and modality to optimize water distribution and consumption as well as maintaining the related hydraulic structures in the irrigation networks. The affiliated Bureau took initiative in holding the 3rd workshop to raise the issue of the water users associations in

1- In fact, the Bureau for Development of Agricultural CBOs undertook the task under the DEFS jurisdiction.

consultation with participating professionals and stakeholders concerned. They represented the following executive bodies:

- Protection and Exploitation of Underground Water Resources- Ministry of Energy (MOE)
- Utilization System and Protection of Surface Water Resources- MOE
- Bureau for Development of Agricultural CBOs (MOJA)
- Bureau for Development of Agricultural Water Resources' Optimization and Consumption (MOJA)
- Secretariat of the Executive Committee on Codes for Optimization of Agricultural Water Consumption

The Workshop focused and deliberated on key issues as follows:

- Investigating the constraints geared to existing water users' associations including legal issues, participation of the users, public supports, management of associations, etc.;
- Examining the processes involved in establishment of associations for exploiting surface and sub-surface water resources;
- Exchanging views on adoption of various appropriate formats (association, cooperative, corporation, guild, etc.)

The Workshop was represented by different provincial managers of extension, soil and water, and water affairs, regional heads for water protection and utilization, directors of users' affairs and surface-water protection, members of provincial committees on codes for optimization of agricultural water consumption, and few other managing directors of irrigation-drainage systems' utilization.

Later, Analytical Hierarchy Process (AHP) was applied via expert choice software for analysis and identification of the most appropriate legal model for smoother interaction with public institutions. This technique is based upon peer comparisons and allows investigation of varying scenarios by managers. In the meantime, the multi-criteria group decision-making model was also employed by the AHP for simulation and adoption of the best water users' association. Results of the foregoing analysis indicate that Guild Water Users' Association (GWUAs) poses the best format for establishment, participation and accountability in water utilization field and maintenance of physical structures.

IRRIGATION – DRAINAGE SYSTEM OF GAZVIN PLAIN AND PERFORMANCE OF PUBLIC MANAGEMENT IN WATER UTILIZATION AND NETWORK MAINTENANCE

Development program in Gazvin Plain consists of integrated water and soil promotion projects which have been gradually shaped and evolved under the context of Gazvin Development Project (GDP). During 1974- 1991 and after approval and execution of "F" alternative for the system, main canal (94 kms) and lateral channels (1100 kms) were gradually constructed and became operational.

The system used to supply around 140 - 200 m.m^3/year (before operation of the Taleghan Dam) to irrigate net 60,000 ha. of lands classes I & II, covering 30,000 farmers under its irrigation service. The results of the public governance over the past decades (before shifting the irrigation service management to the local users) are briefed as follows:

1. Lack of a holistic plan for sound utilization and maintenance of the system and consequently early degradation of its segments;
2. Rapid demolition of almost all structures including checks & turn-out gates, C.H.O, farm inlets and other small and medium steel works in early years of running.;
3. Poor achievement of the initial objectives for gradual rising of efficiency, productivity, and hence, facing substantive drop in performance;
4. Unauthorized installation of inlets for non-standard irrigation of farm plots;
5. Improper water distribution and consequently misuse of the beneficiaries' water rights;
6. Inefficient artificial re-charging process through the modern Gazvin Network (only 15 m.m^3/ year) which highly lagged behind expected rate (61 m.m^3/ year);
7. Unprecedented increment of unauthorized wells and increase of water discharge from authorized ones;
8. Over-discharging of water-tables and severe drop in aquifer level through growing the wells and their up-taking powers;
9. Increase in number of risky settlements intensified by poor civil immunization attempts and rise in people or vehicles' casualties (almost 20 persons/ year).

The above-mentioned uncertainties have, no doubt, genesis in public management with poor quality and inefficient performance over the foregoing irrigation-drainage system in Gazvin Plain. This type of governance has utilized various establishments, workshops, warehouses, machinery, human resources and other assets which are now left as ruins after 30 years.

Over the exploitation years, some efforts were also made to attract farmers' participation into the network management which, however, failed to realize in action. Even, selection of local representatives for dispersed farming plans, local water distributors and encouraging peasants to organize themselves under legal associations at certain spots could never restore the situation or substitute the public management system.

NEW UTILIZATION DISCIPLINE BY WUAS (GAZVIN PILOT SITE);

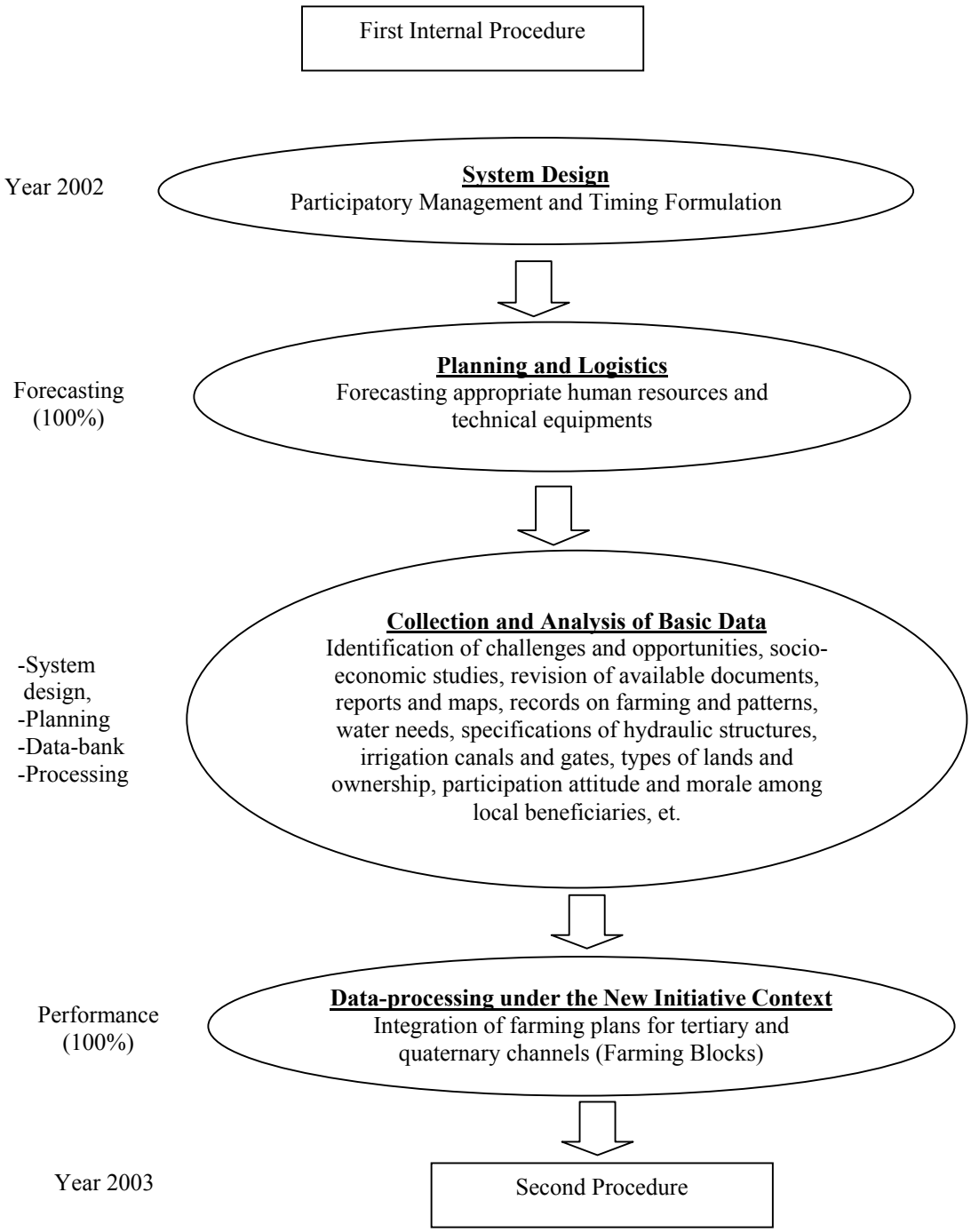
Following the global and national obligations which were incorporated into the national development plans, the foregoing pilot took initiative to launch a new participatory reform and management shared by local farmers in 2002. This scenario, however, encountered numerous challenges and resistances mainly posed by public officials to suspend or vandalize it, but the efforts finally led to creation of the water users associations covering 158 farming blocks with well-scheduled programmes and through following procedures in Gazvin Pilot Site:

Institutionalizing

For

Irrigation Management Transferring Initiative

New Utilization Discipline in Gazvin Irrigation-Drainage System



PROCEDURES UNDERGONE FOR INSTITUTIONALIZING THE NEW DISCIPLINE

1. Planning for logic participation of all real water users in network exploitation and rehabilitation processes with emphasis on community-based irrigation associations**:**

2. Ordering and prioritizing the operational and organizational procedures of the initiative:

1.1. Farming plots for farms between 10- 20 ha.

1.2. Faring groups for farms between 20- 100 ha.

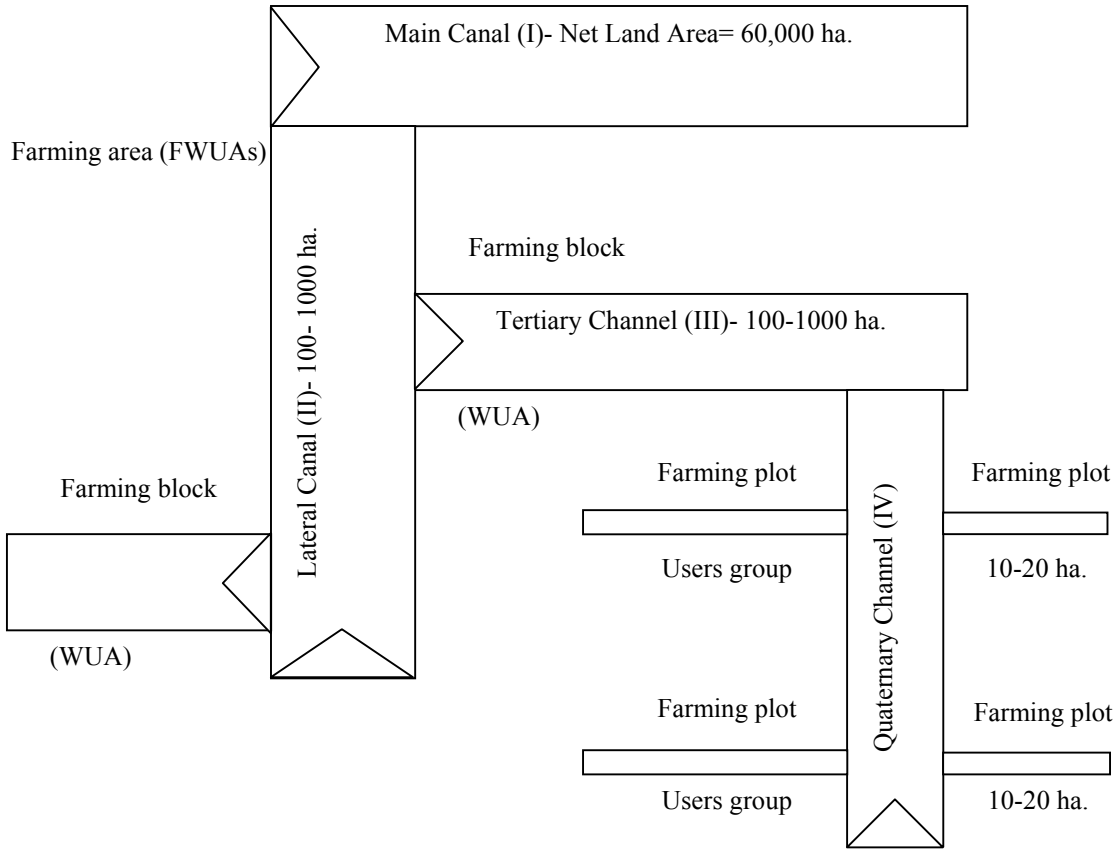
1.3. Farming blocks for farms between 100- 1000ha.

1.4. Farming areas for farms between 1000- 10.000ha.

1.5. Farming center for 80.000 ha. comprising 80.000 gross farmlands (net 60,000 ha.)

3. Volumetric delivery of water to farmers' representatives at inlet spots.

Gazvin Agriculture Center
Federation of Corporate Irrigation Associations



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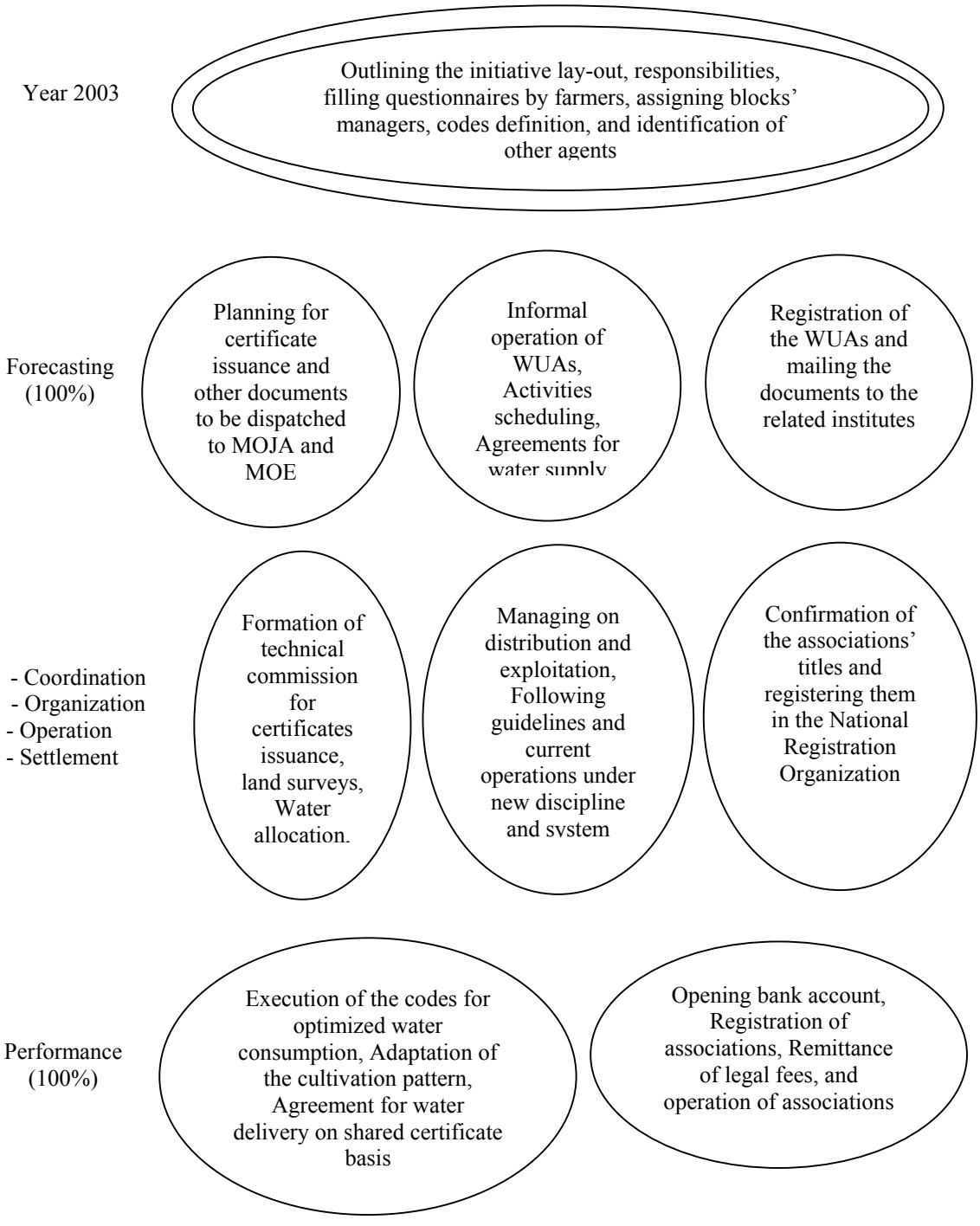
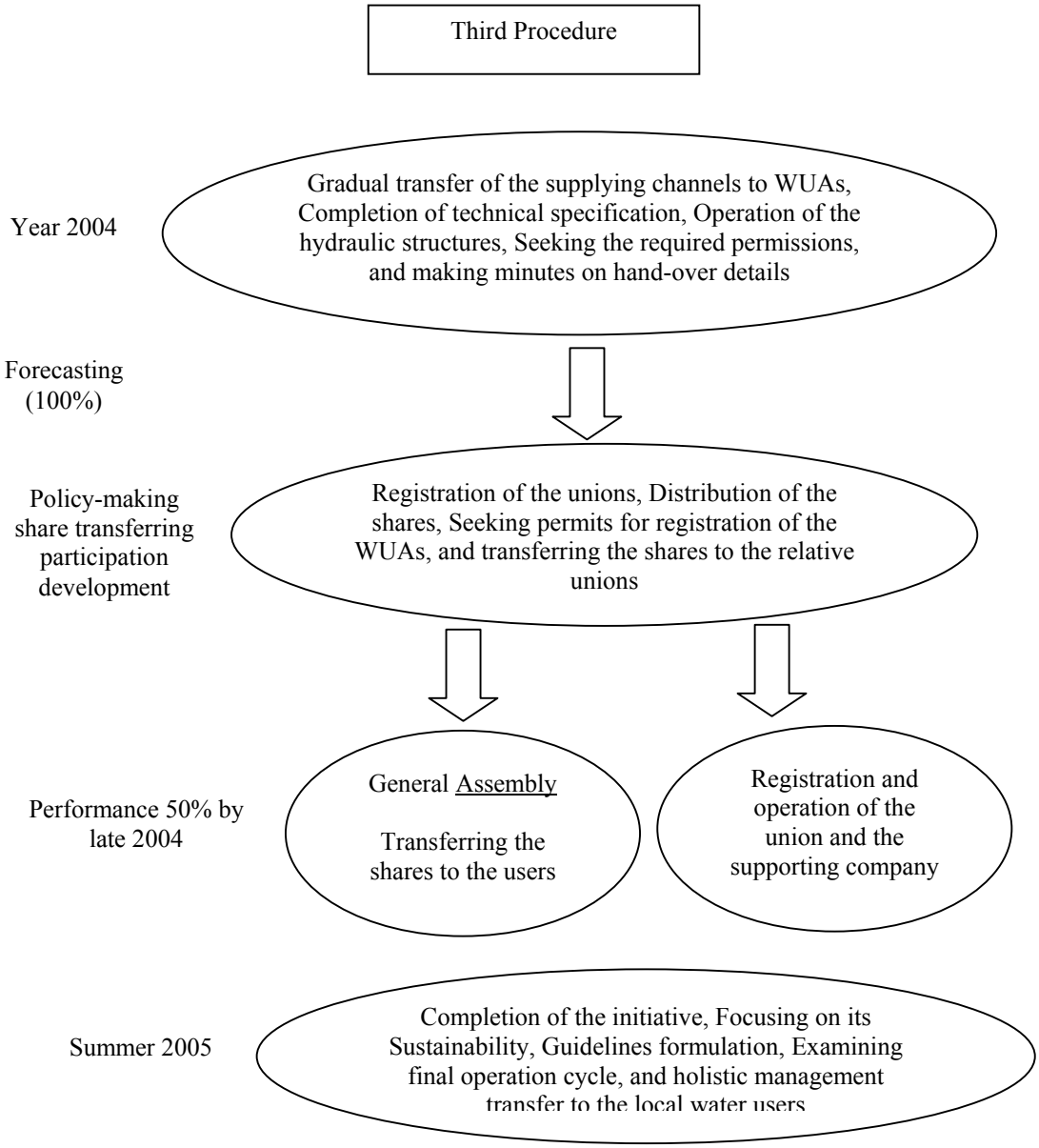


New Utilization Discipline in Gazvin Irrigation-Drainage System

Head Office Affairs



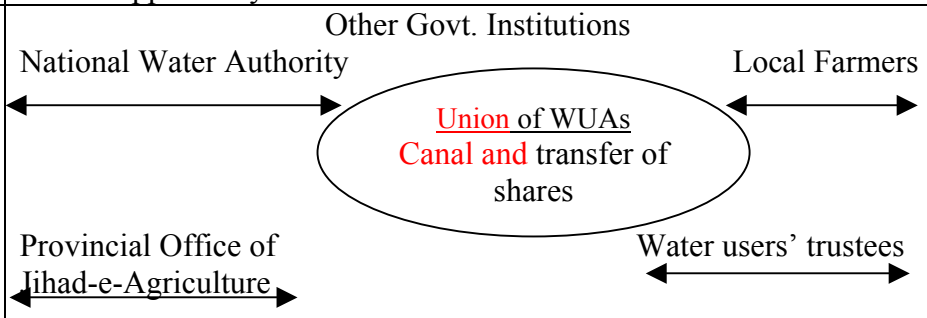
WUAS' COMMITMENTS:

1. Acceptance and registration of demands for water purchasing from the network clients;
2. Examination of the demands with agreements' contexts on water supply, and making quota upon cultivation and irrigation patterns;
3. Planning and coordinating on selling, cashing and making turns for water delivery;
4. Exploitation and distribution of the network throughout 100 kms. of conveying canal and channels (II, III and IV);
5. Volumetric water delivery at farming blocks to the relevant WUAs;
6. Conducting executive affairs and supervising the WUAs operations at channels III and IV;
7. Regular patrolling the establishments followed by reporting the breaches and faulty measures, if any;
8. Accountability and entertainment of the users and removal of their bottlenecks at respective offices concerned.

MERITS OF THE INITIATIVE

Increase of	*Decrease of*
- People's supervision	- Bureaucratic affairs
- Equitable water distribution	- Public referrals
- Wise maintenance of the system	- Government leadership
- Irrigation performance	- Production costs
- Productivity	- Structural deterioration

INTEGRATED INITIATIVE FOR IRRIGATION MANAGEMENT TRANSFER TO WUAS IN GAZVIN PLAIN

Question	Will the initiative be successful at the end?
Plan	Just an opportunity!
Perspective	
Answer	i) Existing status → Resources' waste → Crisis ii) Transfer 100% → Participation → Sustainable Development

EXISTING CHALLENGES FACED BY WUAS:

1. Poor transparency of their positions, authorities, commitments, and relation with the existing Network Utilization Company;
2. Lack of a decisive will in public institutions to support and cooperate with WUAs;
3. Inadequate financial mechanism to back up the newly established WUAs, nor partial allocation of water charge yet realized to support them;
4. New circulations made by the MOE to mobilize emerging contractors who will act as strong competitors parallel to WUAs and eventually retain government management on the system.

RECOMMENDATIONS:

1. Legal formulation and definition of management pyramid on irrigation-drainage systems;
2. Identification of pertinent governmental and non-governmental institutions as well as their inter-relationships for increased transparency and decreased personal interference of middle managers;
3. Consideration of adequate fund for rehabilitation of degraded parts imposed during the public management times;
4. Empowering the newly created WUAs through concession of water charge delivered to them;
5. Conducting certain pathological studies on WUAs and regular surveillance on achievements and obstacles by national development plans;
6. Implication of the outputs in other potential areas.

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