FORMATION AND DEVELOPMENT PROCESS OF PARTICIPATORY IRRIGATION MANAGEMENT IN QAZVIN AREA

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ABSTRACT

Since last fifty years, gradual progression in management style of irrigation and drainage systems supported by promotion of people's participation in management trend has faced the government-oriented or hindering mechanisms to critical challenges at global scale. Genesis of this mind-set could largely facilitate evolution of change management through the four-stage process including: diagnosis, denial, cooperation and participation.

The largest infra-structural establishment of Qazvin was created during 60s and 70s. It enjoys 1200 km. concrete canals bearing conveying capacities of 30 m^3.

The network imitates a telescopic model in operation with hydro-mechanical diversion and checks (Amil) installed at its upstream. The Irrigation Management system in Qazvin (QIM) also follows full public governance as being experienced everywhere across the country. This traditional management, parallel to over-dated structures has left nothing but a depreciated and inefficient network in Qazvin.

A holistic plan for capacity building and empowerment of local farmers was founded in the province to develop a participatory management and promote due changes towards optimum utilization and maintenance of the network. The initiative is reliant on a tree-shaped model and consists of: farming groups, water users associations, unions and their apex Federation at provincial level. Upon direct election of farmers' representatives and formulation of legal instruments, managerial and maintenance affairs in main and lateral canals were gradually transferred to the local clients.

Presently, many commitments encompassing structural rehabilitation and water distribution have been shifted to the farmers in Qazvin, followed by logistic and

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administrative works handled by private sectors. Dynamic involvement of the young men and women at managerial and technical levels scattered at WUAs branches or Federation posts remarks for outstanding aspects of the PIM system in Qazvin. To date, the mode applied for creation of CBOs (community-based organizations) and legislation of NGOs in terms of Water Users Association (WUAs) in Qazvin, generates a national pattern over the state.

Keywords: Participatory Irrigation Management (PIM), Participation, Irrigation Management Transfer (IMT), Empowerment, WUAs, NGOs, CBOs

1. INTRODUCTION

In addition to professional mind-sets, well-designed policy and a 20-year perspectives (National Development Horizon in year 2022) supported by National Constitution (Article 44), have demonstrated a clear horizon for NGOs' development especially in the process of Participatory Irrigation Management (PIM).

Presumably, fundamental studies would contribute to discover the reasons behind the poor performance of irrigation operations, as well as, low productivity of agricultural activities and their barriers. Lots of ongoing challenges and inconsistencies in irrigation networks are referred to mismanagement of the related systems.

Shedding light on the public bodies' function, removal of parallel duties, simplifying operation cycles, developing accountable management system, and generating a committed management to mobilize peoples' participation, would greatly create a spring board for organization and empowerment of farmers' communities , and ultimately, for changing the traditional water management at national scale.

The target area intrudes the Taleghan River Basin bearing an extension of 1000 km2, containing the Qazvin irrigation network with 80,000 (ha) surface areas. Qazvin Development Project (QDP)[1] has foreseen to distribute an average discharge of 460 m.m3/y into 278 (m.m3) for agri-business purpose and 20 m.m3 for artificial recharging of water- tables in Qazvin plain. The grand and multi-purpose Project has provided noble opportunities for provincial development, particularly in cultural, social, infra-structural and occupational dimensions just next to political and economic pole (Tehran) of the country. To this end, various and large production enterprises been so far established which reinforce the basic changes in the area.

There emerged also several challenges and disparities during 30–year management process of the irrigation network in Qazvin, mainly owing to the following reasons:

- Poor utilization of the network's structures;
- Off–service status frequently reported from hydro-mechanical Checks, C.H.O, and Turn- out gates;

1 -Formerly registered as "Ghazvin Development Project-GPD" by the World Bank

- Illegal offending in the network witnessed by creating numerous farm outlets as well as unauthorized wells; and
- Fatal events due to frequent fall of the vehicles or people into the canals.

The overall 5-year plan adopted by Qazvin Irrigation Management Co. (QIM) could organize 30,000 local farmers' under 158 Irrigation associations and 9 unions dominated by an apex Federation. Since 2002, organization and transferring network management to CBOs (Community-Based Organization) deserved central priority and agenda by QIM, which fortunately, led to successful implementation. This initiative was basically accepted and supported by the Ministry of Jihad–e–Agriculture, and the National Water Resource Management followed by assignment of QIM as the national pilot for PIM commencement.

2- CHANGE AS DRIVING FORCE IN DEVELOPMENT

Organizations require fresh and dynamic thoughts and approaches for their existence and progression. For improving the living standards in the evolving pace of the current status, it is inevitable to emphasize on identification of changes in the surrounding environment, as well as, derivation of adequate responses to new conditions.

Innovation and creativity account for core aspects of competent organizations and individuals. The initiative seriously stresses on educating potential managers as the core elements of continued improvement and builders of due capacities for qualified man powers to undertake new commitments. Meanwhile, certain technical groups have to be shaped to liaise with public and private sectors .To realize this principle, proper ground should be paved for shaping specialized groups at public or private sectors. Political and social forces shall accelerate or hamper development of new organizations. Recent changes and their sustainability happened in socio-economic and political settings, relies on governmental efforts bestowed to ongoing institutional and thinking reforms.

Identification and examination of bottlenecks and the factors behind certain misunderstanding, as follows, assumed for the initial steps to attract the beneficiaries' confidence:

I. Gaps or inconsistencies in rules,
II. Mispromising of some authorities,
III. Inefficiency of few executive bodies, and
IV. Poor reaction of judicial system against the offenders.

The existing executive or administrative bodies, particularly, setting fresh cooperation and interaction with farmers, would subject to change through enhanced capacities and creativities amongst the players and farmers of the same area. Qualitative concept of "competency–oriented influence" consists of three elements including capability, accountability and morality represent. If farmers & beneficiaries control the above mentioned condition, it will be effective in the process of empowerment and it will develop CBOs.

3- EXECUTIVE PROCESSES OF PIM IN QAZVIN

The Participatory Irrigation Management (PIM) initiative started its operation since 2002, using local potentials within a 3-year schedule and three general stages: first stage: the company's bound, second stage: Qazvin province bound, third stage: national level. Key characteristics of this idea focus on setting an inter-communication among all institutional processes, in a sense that, the precedent stages have to be well–established in the following years.

Organization of the WUAs in Qazvin plain followed on the identified local requirements and specifications. This task has to get built upon the speed and ease in detection and meeting the needs of every area, and to wards this target, the initiative confronted diverse cultures and sub-cultures with varying aspirations raised over the vast plain in Qazvin.

3.1. FIRST STAGE:

This stage comprised of confidence–building, system–development**,** planning, data-banking and processing within the QIM premises (staff and target clients) during 2002-03.

The most significant prerequisites for development of participation in different activities, spell out for in-depth belief and basic support dedicated by top managers. The proposed legal management system in the network entails the following key measures:

1- Collecting the beneficiaries' views and consulting them to reflect the barriers and inconsistencies;

2- Setting full–coordination in all planning and decision–making processes;

3- Examining the collected views and perspectives followed by offering useful suggestions;

4- Directing general mind–sets toward improvement of social, cultural and economic affairs; and

5- Collaborating in the processes of execution and supervision of related techno–economic plans.

Organization of local irrigation management, as a reliable bed for transferring possible commitments, relies on general culture and technical background of the individuals concerned, and will put into practice through attracting the beneficiaries and building reciprocal confidence. Designing local irrigation management was tracked by consolidating common hierarchical interactions and ties, followed by election of managers and practitioners at different levels within the system.

Different tiers of election and representatives are shown in diagram 1.

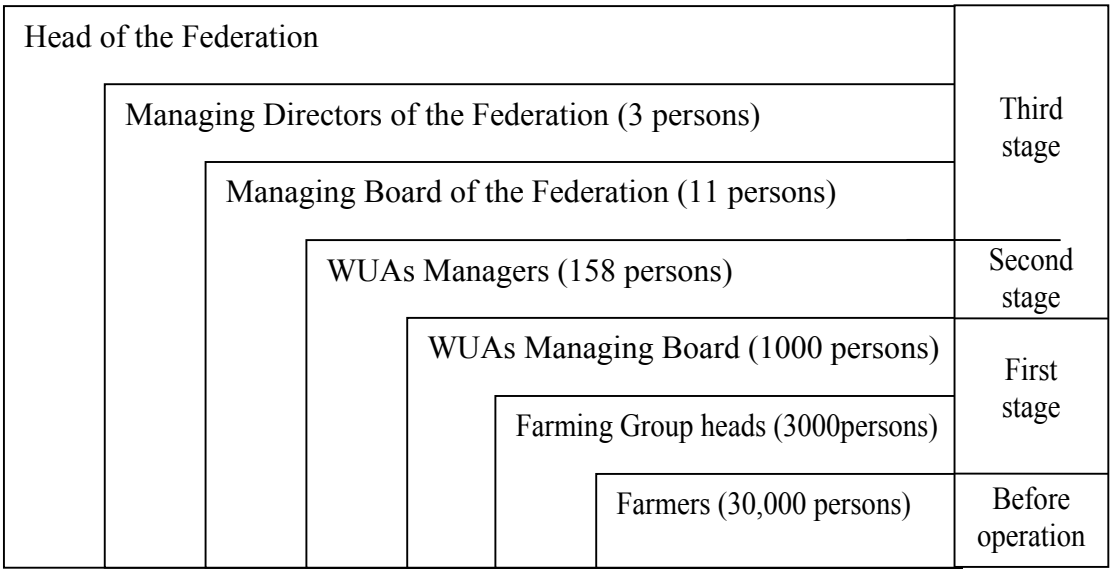


Diagram 1. Election and institutionalization for PIM development in Qazvin

Various programs been foreseen and fully implemented in this stage including:

- setting flow–chart cycle;
- formulating IMT model;
- Collection of basic information as statistics on lands, landowners, and water needs;
- cropping patterns of the area under channels III;
- Derivation of due indicators for information classification;
- Encoding the joint turn–out spots (6 digits);
- planning on due methodologies and matrices for election of farmers' representatives in neighboring plots (100 & 1000 ha.);
- Water–logging in combined wells; and
- drafting typical agreements for water supply and network exploitation based on 158 turn-out points in channels III

3.2. SECOND STAGE:

This stage encompasses coordination, organization, institutionalization, and establishment of local irrigation management especially on canals II, completed in Qazvin during 2003-04? The operational range of the IMT stepped beyond the QIM and even covered key executive institutions at provincial level. Other important measures, as follows, were also taken into account and completed during this stage:

- Registration of 30,000 farmers from 88 population centers;
- Assigning the managers in farming blocks;

- Encoding the farmers' representatives ;
- Filing the related 158 WUAs and dispatching them to the provincial Office of Cooperation for certification;
- Transacting the file containing Article 5 of the Act on "optimum use of agri–water for WUAs" to provincial Water and Agriculture Authorities;
- Concluding proper agreements on water supply and utilization; and
- Forwarding financial issues and order registration affairs for WUAs' operations on canals II.

Meanwhile, the procedure for structuring the Local Irrigation Management pursued the following steps:

(i) Planning for viable and comprehensive participation of local users in exploitation and maintenance of the network, in line with, deserving due entitlements for CBOs and WUAs.

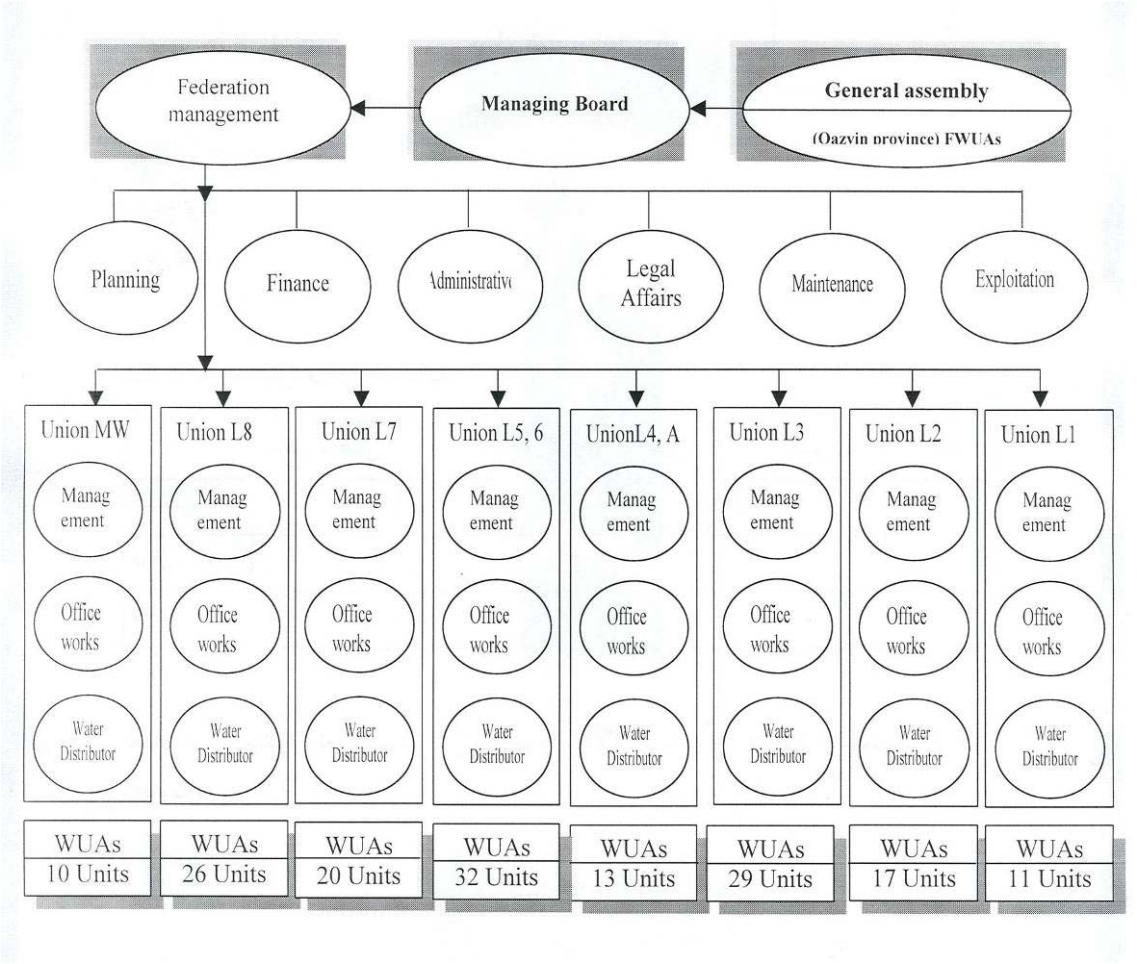
(ii) Volumetric submission of water to farmers' representatives at specific points, and based on approved cropping pattern i.e. cereals 50%, summer crops 25%, and fallow 25%.

(iii) Formatting and prioritizing certain tasks and operations as indicated in Table 1 below:

Table1. Structural and organizational sequences of PIM in Qazvin

No.	Farming unit	Farming area (ha.)	CBOs' working domain
1	Plots	10-20	Farmers' Representatives
2	Groups	20-100	Group-heads
3	Blocks	100-1000	WUAs
4	Area	1000-10,000	LIM/ Distributors
5	Agricultural Pole (Qazvin plain)	Gross 80,000 ha. Net 60,000 ha.	Apex Federation

Following shows the flowchart of the water users' arrangement in Qazvin which was approved and operated by General Assembly in 2005:



"Diagram2". Flow- chart of the Federation and its lower tires in Qazvin plain

3.3. THIRD STAGE:

This stage included activation of provincial Federation, regulation of inter-relationships between the local offices and unions, rendering technical services, transferring the shares, and entrusting the ownership with partial failure, during 2004-05? This stage was partially geared to national level and hence, its completion relies on new policy and legislation to be reformed and circulated later on.

During this stage, few obligations adopted, as follows, but not yet covered due to certain legal or administrative obstacles standing far beyond the QIM liabilities:

- land surveys and cartographic operations (Cadastre Mapping) over the WUAs domains;
- Supplementing the available documents by precise re-examination of the network's segments and status;
- Preparing official minutes on transferring of channels III and IV to the WUAs ;
- Transferring the QIM shares to the new local users;

- Refunding the water rate in favor of network rehabilitation; and
- Official devolution of the canals ownership to the WUAs.

In the third stage, the QIM, as the planner and operator of this initiative, could implement possible mandates as described below:

- Expansion of water-ordering registration and checking the requests across the water rights;
- Rendering water sale and services at local irrigation management offices (on Canals II); and
- Activation of the Federation for practical involvement of the farmers in operation and maintenance of the network.

4. PIM DEVELOPMENT IN QAZVIN AND ITS IMPSCTS

4.1. TRAINING THE STAFF AND WUAS MEMBERS

Normally, administrational systems together with working cycles and methodologies always tend to retain the ongoing and daily commitments.

Training and disseminating the new approaches developed by top managers of executive institutions play a basic role in promotion and change of such passive system. To this end, appropriate training courses were conducted towards up-scaling knowledge and potentials of QIM and Federation staffs. The foregoing courses were designed and practiced at large scale and in cooperation with other organizations. Following are the courses convened by QIM during the past 4 years:

- Training course on PIM development implemented as group–works for managers, experts and technicians, followed by weekly meetings participated by QIM, Federation and unions' Managers. As a whole, 36 work–groups were formed on organizing suggestion system.
- Training course on utilization and maintenance of the irrigation system which run for two weeks and targeted some QIM and Federation staffs to raise their knowledge and proficiency.
- Training course on social prevention and protection which aimed at prevention of offending in the network area, and conducted in collaboration with provincial judicial authority for 170 participants of QIM and local users.
- Training course on IMS (quality, environment, professional hygiene and immunity), which operated in cooperation with R.W.T.U.V Iran Co1. Of Iran and focused on promoting internal auditing of IMS for experts and technicians in QIM and Federation.
- Training course on First Aids which realized to make the staffs and members prepared against probable events during operation or even beyond the network

1- A German agency responsible in certifying certain standards and qualification in Iran

limits. This course was carried out for 40 hours in cooperation with National Red Crescent Organization at A and B levels in 2006.

- Training course on machinery operation and maintenance which launched for 40 hours to upgrade the drivers' competency at Alborz Industrial Complex.
- Training course on fire-extinguishing practices performed at QIM to expose QIM and Federation staffs to fire suffocation methods in assistance with provincial techno –vocational organization and Fire- Station in 2006.

It seems convention of successive training courses, as well as, participatory working cycle for proceeding current and developmental businesses have underlined the PIM success in Qazvin.

4.2. GENERAL ACTIVITIES AND INFORMATION DISSEMINATION

Active participation at national/international conferences related to management of irrigation and drainage, and exchanging the findings have always been regarded as crucial priorities in the QIM.

To this end, the Company developed and activated its web-page in 2005, followed by another page for the Federation in the next year. This web station now stands for the first e-news forum of non-governmental irrigation management across the country.

4.3. Roles of the youth and women in the project

Creation and fixing occupational status together with self–confidence would contribute in rising managerial pace and impacts of the youth and women communities. They are so qualified and strong that can jointly launch continuous struggle against poverty and construct their homeland. Many of them shared in development with their intrinsic motivations and powers.

Simultaneous with the Associations or Federation operation's in Qazvin , and gradual commitment in the largest irrigation network of the area, numerous empowered men and women stepped in and undertook crucial functions at medium or high positions. They occupied key professions as managing directors, accountants and planning managers in the Federation or the local irrigation offices. Presence of female top managers next to the male authorities in agricultural CBOs, has generated well–structured organizations for enhancing the irrigation management system with appreciable achievements at provincial scale.

To date, the gender ratio governing on employed experts and technicians depicts a prevalence of the females to males (57%). They also possess a reasonable ratio (40%) in general occupations distributed at various services in Federation and the local irrigation offices (Diagram 3)

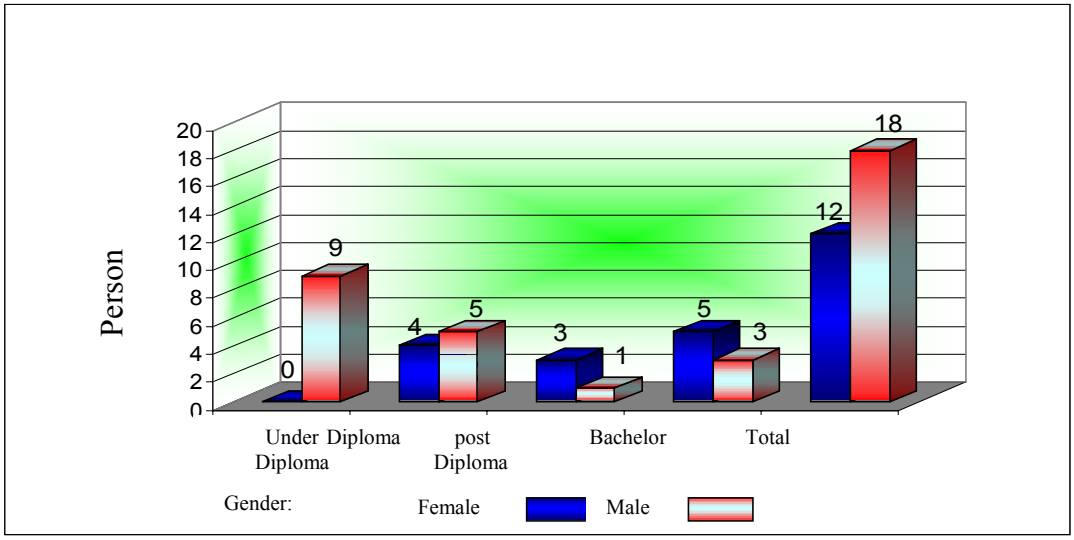


Diagram3. Gender comparison on WUAs staff in Qazvin

4.4. Impacts of PIM implementation

The PIM in Qazvin was set into fruit through:

- Planning for balancing or reduction of incompetent man powers;
- Transferring subsidiary functions to external operators; and
- Paving the way for WUAs' participation in utilization and maintenance of the network ;

This initiative generated authentic outcomes, as follows, which gradually extended to target beneficiaries:

1- Facilitation of office works or field operations through narrowing the network functions;

2- Down-sizing the public interventions and hence, balancing the number of staff at QIM;

3- Reduction or even stopping the users' approaches to public offices, and in particular, to QIM by 95%;

4- Introduction of local irrigation management in channels II, III and IV and remarkable save in people's cost and time;

5- Devolution of passable functions to local people and gradual substitution of public sector by CBOs;

6- Defending of farmers' rights according to the proposed conical chart of accountability;

7- Transparency of interactions between the farmers and governmental bodies , and possibly reduction of organizational offending and corruptions;

8- Separation of responsibilities and equitable distribution of water and expansion of social justice;

9- Reduction of water losses and seepages in favor of promotion in irrigation performance;

10- Reflection of useful comments for improved utilization and maintenance of the network;

11- Planning for controlling and removal of unauthorized or non-standard turn–outs;

12- Saving in water consumption for its subsequent impacts on exploitation and control of Qazvin water-catchment.

13- Raising productivity through fixing, maintaining and utilizing the network;

14- Setting minutes on submission of the network and its segments followed by bedding for essential protection of national assets.

15- Confirming the theory on effectiveness of participatory irrigation management (PIM) or consultation in Iran ; and

16- Creating employments for experts or technicians at Unions and Federation scales.

5. RECOMMENDATIONS

5.1. TRANSFERRING THE FUNCTIONS TO THE LOCAL CLIENTELE

Regarding the incredible progressions made by PIM in Qazvin, it is strictly recommended to apply public funds or subsidies in harmonization with the Federation's opinions. There seems reliable stand provided to refund the water charges for required repairs and maintenances to be handled by Federation.

5.2. BASIC STUDIES AND INFORMATION DISSEMINATION

So far, extensive studies made to yield proper strategies for devolution of network's functions and leadership to CBOs shaped in Qazvin. Now, its time to disseminate gradual information on PIM to attract attention and assistance from all players and practitioners involved. Besides, emphasis should be a attached to disclosing each and every corner of the initiative, followed by blocking anymore parallel studies and costs on IMT approaches. Along this trend, certain supplementary field-oriented surveys are also identified for possible convention and analysis.

5.3. SEPARATION OF MANAGEMENTS IN WATER RESOURCES AND UTILIZATIONS

Scholars highly stress on distinction of supplying and utilization of commodities owing to the core differences seen in their natures. The reason strongly stands behind formation of various production as well as utilization bodies in major fields as oil , gas, electricity, tele-communication, "water and sewage water" , etc. , whereas , the water sector still suffers from certain intermingled affairs in managerial fields, and pending for rational solutions to be outlined by eminent experts or managers. It seems, however,

that the promising scenario adopted by electricity sector (comprising of separated supply and use divisions) shall be duplicated for water sector, as well.

5.4. FULL DEVOLUTION OF COMMITMENTS TO WUAS

It is suggested that all commitments foreseen in micro–water allocation to agriculture sector, followed by water resource protection, **network** and its premises control and supervision are handed over to provincial water utilization body. Presumably, few modifications applied to water management system of the M.O.E, shall provide a tailor-made platform for such switch–over in obligations.

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