ZEF

Working Paper Series

22

Center for Development Research

Department of Political and Cultural Change

Research Group
Culture, Knowledge and Development

universitätbonn

Zentrum für Entwicklungsforschung
Center for Development Research

ISSN 1864-6638

Bonn 2007

Resul Yalcin and Peter P. Mollinga

Institutional Transformation in Uzbekistan's Agricultural and Water Resources Administration:

The Creation of a New Bureaucracy

ZEF Working Paper Series, ISSN 1864-6638
Department of Political and Cultural Change
Center for Development Research, University of Bonn
Editors: H.-D. Evers, Solvay Gerke, Peter Mollinga, Conrad Schetter

Authors' address

Resul Yalcin, Postdoctoral Researcher "Natural Resources and Social Dynamics"
Center for Development Research (ZEF), University of Bonn
Walter-Flex-Str. 3, 53113 Bonn, Germany
Tel. 0228-734912; Fax 0228-731972
E-mail: ryalcin@uni-bonn.de

Peter M. Mollinga, Senior Researcher "Natural Resources and Social Dynamics"
Center for Development Research (ZEF), University of Bonn
Walter-Flex-Str. 3, 53113 Bonn, Germany
Tel. 0228-734918; Fax 0228-731972
E-mail: p.mollinga@uni-bonn.de

Institutional Transformation in Uzbekistan's Agricultural and Water Resources Administration: The Creation of a New Bureaucracy

Resul Yalcin and Peter M. Mollinga[1]
Center for Development Research (ZEF) University of Bonn

Abstract

This paper analyses the institutional transformation of the Uzbek agriculture and water resources administration after Uzbekistan gained independence in 1991. This transformation involved the creation of a joint Ministry of Agriculture and Water Resources in 1997 out of two separate Ministries, and subsequently the process of transforming the region and district based administrative water management system, extended since the creation of the USSR, into an irrigation basin water management system based on the hydrological principles. The latter involved the creation of the Irrigation Basin System Management Authorities in 2003.

This study suggests that the merger of the two ministries in 1997 came about as a result of a broader process of organizational change that was part of the post-Soviet state-building process. It was not determined primarily by the idea of achieving equitable water distribution as a normative principle or creating two equally important departments within one ministry, as has been suggested by Wegerich (2005). The analysis of the move towards creating the Irrigation Basin System Management Authorities in 2003 shows that the change should not be seen as a move towards the recreation of a separate Ministry of Water and Ministry of Agriculture. That is, it is not a 'de-merger process' as has, again, been suggested by Wegerich (2005:462). It should rather be seen as a separation of tasks within a single ministry, and a move of the MAWR as a whole to reduce hokims (regional/district governors) influence over its tasks. Overall, the study shows that Uzbekistan's water resources management institutions and organizations are created mainly to serve state-controlled agricultural production. Decisions on water allocation and distribution have always been influenced by the agricultural departments, also when there still was a separate Water Ministry before 1997. Reform processes in the water sector have usually been determined by reforms in agriculture.

The theoretical focus of the paper is the analysis of administrative and policy reform process a situation of a 'state-centric' politics (Grindle (1999), in contrast to a 'society-centric' politics. The latter has dominantly been the empirical reference as well as conceptual and instrumental framework of the Western 'policy process' literature. Such frameworks may not be (fully) applicable in evidently state-centric situations like Uzbekistan. The study explores where the initiative for institutional change in the agriculture and water resources domains came from, how new institutional models were generated, how political and economic actors adapt to institutional changes, and, overall how the dynamics of institutional transformation in Uzbekistan is different from that in 'society centric' contexts.

[1] Resul Yalcin is Postdoctoral Researcher and Peter P. Mollinga is Senior Researcher at the Centre for Development Research (ZEF), University of Bonn. The field work for this paper was conducted in the context of the NeWater, an Integrated Project in the 6th EU Framework Programme Funded by the EU. Contract No: 511179 (GOCE).

1. Introduction

> "To fulfil the decree of the President of the Republic of Uzbekistan on "Organizing the activities of the Ministry of Agriculture and Water Resources" and in order to create a completely new agricultural and water management system to improve the productivity in the agricultural sector, the Cabinet of Ministers decrees: to be noted that the Ministry of Agriculture and Water Resources of the republic of Uzbekistan is the lawful successor of the abolished Ministry of Agriculture and Ministry of Melioration and Water Resources and the leading body in the field of agriculture and water management to carry out the functions of the former ministries.....Taking into account the necessity to establish market systems that help to extract agricultural and water management organizations from governmental property; to form market infrastructure in rural areas; to improve the efficiency of agricultural production and to transform the existing production associations in the republic into an organization of farming units, these institutions have to be reorganized under the new Ministry of Agriculture and Water Resources of the Republic of Uzbekistan in consent and collaboration with the State Property Committee and its direct assistance. ....The Cabinet of Ministers should within two weeks from this date give suggestions about the direct activity of the new organization, its functions and number of personnel and their suitability for the market norms accordingly.... In order to avoid repetition in the work places and parallelism, the enterprises and organizations with similar structure, activities and functions must be merged, dissolved or reorganized within one month....." (Cabinet of Ministers, decree no. 419, 26 November 1996)

With the adoption of the above decree two former separate ministries, the Ministry of Agriculture and the Ministry of Melioration and Water Management of Uzbekistan, which had existed since 1927-1928, were officially abolished, and in their place a new centralized single organization - the Ministry of Agriculture and Water Resources (MAWR) of Uzbekistan, was established to oversee all the functions and the works of the two abolished ministries throughout the republic. The actual establishment of the new Ministry took place in 1997 including regional (viloyat) and district (tuman) based departments. Similarly, the structures of the Ministry of Agriculture and Water Resources of the Karakalpakstan Autonomous Republic, with its regional and district agricultural and water management departments, was also created and placed under the central ministry in Tashkent.

Another change in organizational setup happened six years later. In pursuance of Presidential decree no. UP – 3226 adopted on 24 March 2003, proposed by the Ministry of Agriculture and Water Resources, supported by the Ministry of Economy and Ministry of Finance, the Cabinet of Ministers on 21 July 2003 adopted decree no. 320 to transform the region and district based administrative water management system, a continuation of the Soviet system, into an irrigation basin water management system based on hydrological principles. Ten main new irrigation basin management authorities and one main canal management authority were established. Unlike the organizations established in 1996-1997, these irrigation basin management organizations are, administratively speaking, not directly responsible to the local governors (hokims) or to the regional (viloyat) and district (tuman) offices of the MAWR, but are directly responsible to the water resources department of the MAWR in Tashkent. The water resources department is headed by one of the deputies of the Minister responsible for water resources management in Uzbekistan. The existing 13 administrative region (viloyat) based (including the autonomous republic of Karakalpakistan) are now replaced by ten main water and one main canal irrigation basin management authorities.

The 163 administrative district based departments were replaced by 52 hydrologically defined offices of the irrigation basin management authorities in 2004.

This paper is concerned with these two moments of institutional transformation in the Uzbek water and agricultural administration. The question is how to understand and interpret these transformations. Wegerich (2005) presents an interpretation of the merger of the two ministries which can be taken as the starting point of analysis. He suggests that the transformation was driven primarily by the idea of achieving equitable water distribution as a normative principle and creating two equally important departments within one ministry, that is, as expressing a change in the balance of power between the agriculture and water parts of government (Wegerich 2005: 455,458,459-62). We suggest that the merger of the two ministries came about as a result of a broader process of organizational change, part of the post-Soviet state-building process[2], with the dominance of agricultural concerns as continuity since Soviet times. The merger of the two ministries is the translation of that dominance into the new conditions of an independent state. The creation of the Irrigation Basin Management Authorities in the republic in 2003 is to be understood, in our analysis, not as a changing water-agriculture relationship, but as motivated by the desire to separate the 'functional' governance of water and agriculture from the 'political' regional governance by hokims, that is, as a (modest and partial) change in the relation between the MAWR as a whole and the regional 'political' governance system.

The theoretical question the paper explores is the analysis of administrative and policy reform processes in what Grindle (1999) has called a situation of a 'state-centric politics', in contrast to a 'society-centric politics' situation, which has dominantly been the empirical reference as well as conceptual framework of the Western 'policy process' literature.[3] Uzbekistan is no doubt a case of highly 'state centric' policy process due to its highly centralized, and authoritarian[4], political and administrative system, which at present excludes public participation in the policy making process as projected as a component of 'good governance' in the global water policy discourse for instance.[5] One reason that such 'state-centric' politics and administrative system received relatively little attention in the policy literature is the methodological difficulties involved in investigating policy processes that happen mostly outside the public eye and public domain. Policy decision making is carried out in relatively closed contexts. The pressures of civil society on government or on political officials hardly exist. Initiatives for action, including policy change in Uzbekistan do not emerge from political parties, public opinion or other mechanisms in civil society. They emerge within the official bureaucracy and largely reflect the actions of elites within the government. The policy process is highly personalized, but its successful outcome depends very much on achieving

[2] Fukuyama (2005), defines State-building as the creation of new government institutions and the strengthening of existing ones.

[3] See Hill (1997) for an overview of 'policy process' frameworks.

[4] There are various distinct ways by which nations organize themselves politically. One of these ways may be labelled "authoritarian." An extreme version of this model has sometimes been termed "totalitarian." Although contemporary authoritarian systems can vary considerably from one state to another, in their institutional and operational specifics, they share in common the tendencies (a) to minimize opportunities for effective and recurring popular participation in the political process; (b) to discount the importance of maintaining mechanisms and structures of diffusing political power. Until a few years ago, the majority of nation-state political systems were authoritarian. In recent years, there has been a significant movement away from the authoritarian arrangement. Yet, of the approximately 190 nation states in the world, at least half are conforming to the authoritarian model. We have used the term "authoritarian" as a contrast to political systems variously labelled as "constitutional democracy", or "pluralist democracy" models which encourage popular participation in the political process to a substantial degree and diffuse political power structurally and institutionally to some degree. For further discussion of political ideologies see Heywood (1998); Festenstein (2005), and Hoffman and Graham (2006).

[5] See for example Rogers and Alan (2003); Saleth and Dinar (2004)

collective decision making within the bureaucracy. The existing Uzbek political parties have not shown themselves, in terms of programme, ideology or leadership, as opposition parties in the real sense[6]. They are 'government-friendly' parties which have been created on the president's initiative. They are mainly parties organized by groups of people holding similar views.[7] The party structures have been bypassed by the president and its power has shifted to the government agencies headed by his personal allies and staff. The dominant role of the government at all levels of the country's transformation precludes the emergence of other channels of information between the citizen and the state, and thereby direct and public 'social shaping' of the policy process by other than the state agencies and actors.

'Society-centric' analytical frameworks that emphasize the contestation of policy formulation and implementation by different societal interest groups thus seem to have their limitations in cases like Uzbekistan. In our view Grindle (1999) is correct in her criticism on this point. This raises the question of what mechanisms then do work in a 'state-centric' policy regime like Uzbekistan. Our field research and interviews-based data collection in 2005-2006 on Uzbekistan's water governance and policy reform process[8], suggests the following tentative general observations. Within the government bureaucracy there are certainly interest groups, who are involved in extensive consultation, negotiation, consensus building and sometimes bargaining between elites and various government departments for policy or institutional change. This process can take place in the form of a commission set up by the government to legitimize the elite's decision or for consensus building among the political actors; they can be a group of bureaucrats using their social and political kinship to affect other elites within the government; or an interest group can be represented by a charismatic leader with close allies campaigning for a policy change.[9] A charismatic leader sometimes finds agents within the bureaucracy to mobilize support for his/her initiative. Depending on the type of the policy change, sometimes the idea for change comes directly from the presidential office and the cabinet of ministers are asked to approve it with little discussion, and sometimes the ideas for change come from a government bureaucrat. An initiative for change that comes from the presidential office is rather influential and quick to be adopted. However, initiative that comes from a bureaucrat involves many internal discussions, diplomacy between various government departments, persuasions, and consensus building within the bureaucracy. The success and failure of the bureaucrat who initiates policy depends very much on his alliance with high level politicians who have extensive formal and informal power within the government bureaucracy.

Ideas matter in reform initiatives (Grindle 1999). Indeed ideas play an important role in the reform initiatives in Uzbekistan, but they take time to materialize. They have to be absorbed first into the bureaucratic system and then explained in a "correct" language which fits political culture. Policy ideas enter into the system from outside via international organizations; through diplomatic channels; as a result of high level political actors' visits abroad as well as emerge from experiences gained through reforms within the country. There are also occasions of

---

[6] President Karimov himself has confirmed this view several times during his address to the Oliy Majlis complaining that the political parties in Uzbekistan has not achieved the work becoming as real parties/and or opposition parties in the real sense. On the XIV-th Session of the parliament (14 April, 1999) Karimov expressed his criticism on the lack of competition between parties and said that "they cannot so far find their place in political life, economic, cultural and spiritual spheres of our society". On the 9th session (29 August, 2002) he recognized that parties are amorphous and that they need to form the real multiparty system, which implies opposition. See also Karimov (1997: 167-168). It is not easy to fully fathom the exact need and significance of such presidential statements.

[7] Yalcin (2002)

[8] The findings of this paper are based on the secondary material, 56 interviews and a number of discussions conducted for the field research in various parts of Uzbekistan.

[9] Grindle (1999) identifies 'leadership' as one of the neglected areas of the study in Western 'policy process' analytical approaches.

scientific research conducted by the government through local scientists and asks international organizations like WB, ADB, UNDP, and TACIS to provide policy recommendations. The majority of Uzbek politicians and bureaucrats still interpret problems, select and assess the options to deal with those problems very much within the "Soviet way of thinking" of omnipresent state control in economy and society[10]. Some high level politicians and bureaucrats see new ideas as a threat to their own interests, some actors reject new ideas simply because they don't support their policy preferences but others act upon new ideas both to 'solve particular problems out of conviction and out of some more self-interested motivation' (Grindle 1999). As the policy process in Uzbekistan is rather a closed process and most of the discussions occur outside of the public domain, it is always a puzzle and impossible to conclusively analyze how much individuals or groups are acting out of conviction or out of self-interested motivation.[11]

In addition, we would like to suggest that no matter how authoritarian the political system is, it is not always a single authority that decides everything. Though the Uzbek political system is highly closed and centralized, and the policy processes are decided within the bureaucracy, most decisions seem to be taken in dynamic processes within that closed environment. Researchers should avoid interpreting policy formulation and institutional reform processes too quickly as singularly centralized, authoritarian and uni-directional. Such interpretations may express the difficulties of investigating such processes more than their actual features.

After this introduction sketching the overall empirical and theoretical scope and inferences, we now move to the analysis of the cases at hand. The case analysis moves in three steps. Firstly we give a brief background to the agricultural reform processes in Uzbekistan and state how these reform processes led to the reforms in the water sector. Secondly we discuss the merger and the reasons behind the merger of the two ministries. The third step examines the process of transforming the region and district based administrative water management system into an irrigation basin water management system based on hydrological principles. We conclude in section five by summarising the analysis of the case study findings and revisiting the general issues outlined in this introduction.

[10] For example despite strong policy announcements regarding the introduction of market economy principles by the government (there are more than 15 Presidential and Cabinet of Minister's decrees devoted to introducing market economy principles; President Karimov has reminded his officials of these several times during his speeches to the parliament), yet the practice of economic policy remains heavily state dominated and transformation is very slow. (See also, Karimov (1993a; 1994 and 1995). Also the issue of introducing market principles in water management through water pricing referred below is also an example of this.

[11] For example, we are unable to conclusively interpret the following cases. 1) Former deputy minister of Agriculture and Water Resources (in 2002-2004) who is known to be the father of the idea of creating the institutions of Irrigation Basin System Management Authorities in Uzbekistan was in the end appointed to a higher position (became the governor of Syrdarya region). 2) The Minister of Agriculture (in 1994-96) who initiated the idea of the merger between the Ministry of Agriculture and Ministry of Melioration and Water Resources, immediately after the merger, was appointed to a higher position too. 3) The then Minister of Water Resources, who had initially not been in favour of merging the Water Ministry with the Agriculture Ministry, but then allegedly at a later stage joined the idea of merging the two ministries was appointed as the Minister of the newly created larger Ministry of Agriculture and Water resources, but about four months latter was dismissed from his position. 4) The bureaucrat at the Ministry of Agriculture and Water Resources who first initiated the idea of Water Users Associations within the Ministry's bureaucracy, was later dismissed from the Ministry though the Water Users Associations were established country wide.

2. Agricultural Reform Processes in Uzbekistan

Contemporary Uzbekistan as a political entity with its boundaries and organizational structures was created by the Bolsheviks during the 1924-25 'national delimitation' that divided Central Asia into several new ethnically-based units. Uzbekistan became one of the fifteen constituent republics of the Soviet Union in 1924.[12] Uzbekistan was the fifth largest Soviet republic and was of special economic importance because of its potential to produce large quantities of cotton.[13] Soon after the Soviets established the "national" state institutions in the republic, they extended a direct centralized control over all these institutions and attached them firmly to the Central Ministries in Moscow.[14] For example, in Uzbekistan the Ministry of Agriculture was created in 1927 and Ministry of Melioration and Water Resources in 1928.

The Soviet regime developed a cotton monoculture in the republic in a short period of time and transformed the Uzbek society into a cotton colony to produce raw materials for the union's textile industry.[15] The formation of collective farms and the development of irrigation came soon after the Ministry of Agriculture and the Ministry of Melioration and Water Resources were established. The republic's agriculture was organised into Kolkhozy (collective farms) and Sovkhozy (state farms) with a very small proportion of the total sown land allocated to workers as personal plots.[16] By 1948, 98.8 per cent of Uzbek peasant households were conjoined in collective farms.[17] The principal difference between these two forms of ownership was that a Sovkhozy was a state enterprise whose workers were employed at fixed wages. By contrast, a Kolkhozy paid its workers from its own annual earnings. The trend before the break up of the Soviet Union was towards an increase in the proportion of Sovkhozy, because state ownership was considered 'ownership by the entire population' in contrast to the cooperative ownership of the Kolkhozy.[18]

Collectivisation brought fundamental changes in both the organisation of labour and work skills. Traditional forms of farming, manufacture and trade were eradicated in order to make way for modern methods. Alongside the efforts to establish new norms and values, and bring about a modern society, a concerted campaign was undertaken to remove every visible vestige of pre-Soviet culture.[19] Little attention was devoted to the creation of manufacturing industry and so Uzbekistan became highly dependent on inter-republic trade. The changes had dramatic results, particularly in the cultivation of cotton. Although irrigated agriculture had existed in the region for thousands of years, it was first the Tsarist and then the Soviet regime that greatly expanded cotton cultivation through huge, highly integrated irrigation systems. This was followed by construction of the reservoir and dam system along the Amu Darya and Sir Darya Rivers in the 1950-70 period. The reservoirs were multipurpose reservoirs, but their primary goal was to support cotton production. As the agriculture and irrigation network was expanded the institutions to provide services for the sectors as well as to manage and control the system were developed accordingly. The driving force behind agricultural development in the Soviet period was to achieve maximum crop output, as opposed to the optimum.[20] From 1960

[12] Sabol (1995), Yalcin (2002).
[13] Mandelbaum (1994).
[14] Abdullaev (2005), Ranger (1998).
[15] Bacon (1966).
[16] Khan (1996).
[17] Khan (1996), Coates and Zelda (1951).
[18] Khan (1996).
[19] Bacon (1966), Carrère d'Encausse (1987).
[20] O'Hara (1998).

until the early 1980s, land under irrigation and cultivation increased from 2.3 million ha to 4.2 million ha.[21] As the area of land cultivation increased so did the amount of water required for irrigation.

By the 1970s, agriculture had become the dominant sector of the Uzbek economy. The structure of the economy was closely integrated with the investment and production system of the whole union throughout the Soviet period.[22] As a sub-unit of the Soviet command economy, production in Uzbekistan was planned under the direction of the central authorities in Moscow. The union-wide state order system was used to ensure that production targets for specific goods were met, and the central planners decided the strategic productive role of the republic. This, on one hand, determined the evolution of the economic structure in the country, and on the other hand, provided the republic with funds from Moscow for investment.[23]

Uzbekistan acquired its independence following the break up of the Soviet Union in 1991. The collapse of the Soviet system took with it the ideological framework within which modern Uzbek society had functioned: the Soviet national constructs including administrative identities, history, language and territorial boundaries. The responsibility for planning and implementing developmental policies shifted from the Moscow to the newly independent republic, but there were no ready alternatives to adopt. The sudden transformation from what was, in effect, colonial status to that of de jure independence, brought to the fore an intense sense of insecurity in Uzbekistan.[24] This concerned questions about the role of the individual and the state, and the role of Uzbekistan in regional and international affairs. Which path for further development would be the best? What should future political institutions look like? What should guide future changes, reforms and reorganisations? The Uzbek political elites, using many of the mechanisms of the Soviet period, took the initiative in shaping a new national ideology, to provide the answers to these questions and build a new post-Soviet Uzbek state. In the politics of Uzbekistan, the year 1991 was not only the date of gaining independence for the country, but it was also a revival of traditional self-identification. It was not only the proclamation of a democratic future but also an appeal to the pre-Soviet history and glorification of the great past.

The government's programme for reform, which involved enactment of new legislation, creation of new institutions and implementation of structural changes, was cautious, step-by-step and initiated in two stages. Stage one was undertaken in 1992 and completed by the end of 1994. It concentrated on allowing private residential housing and establishing small-scale privatization of retail shops, trade and service enterprises. In 1994 a number of important changes were initiated in the agricultural sector. Almost all the Sovkhozes were abolished and transformed into cooperatives of family farming. However, the mode of government regulation of agricultural production was maintained (prescription of crops through the state order, compulsory sale to the government, etc.). Kolkhozes became entirely new agricultural units. Their lands were distributed to personal plots for workers in Kolkhozes and thereby millions of Dekhan farms (peasant farms) have emerged. In mid-1994 the second stage of the economic reform programme began. It focused on the privatization of state property, formation of a multi-sectoral economy and further improvement in taxation, financial and monetary policies; liberalizing external economic activities to overcome the recession; ensure macroeconomic stabilization and increase output by stimulating domestic production activities and reducing the inflation. The second stage also targeted self-sufficiency in some key sectors, such as fuel, energy and grain. The most important change in agriculture in this second phase was the move

[21] ADB (1996).
[22] World Bank (1993).
[23] UNDP (1996).
[24] Yalcin (2002)

towards individual farming. New forms of farming such as Dekhans in 1994, and Shirkats (agricultural cooperatives) in 1998 have emerged. However, due to bad financial performance these Shirkats were gradually broken up into Fermers ('private' individual farmers) in 1999. The first few Shirkats abolished were experimental cases, the practice of full transformation of Shirkats into individual farms started in 2004 and ended in January 2006.

The republic is still one of the world's major producers of cotton. The Uzbek government remains poised to maintain the cotton economy, while looking into methods of addressing the environmental problems and using water more rationally. Agriculture provides the main source of income for more than half of the Uzbek population. It also supports other sectors, such as industry and social services. Therefore, the productivity and sustainability of agricultural production has been one of the main concerns of the government. Changes in the agriculture sector have been gradual and accompanied with many organizational adjustments.[25] Several ministries and agencies have been restructured or new departments formed within the existing structure; in some cases the ministries were closed, recentralized and/or their functions transferred to other institutions. Reorganization was undertaken in 50 ministries and government departments all over the country.[26] Some important examples are the following.

- The Ministry of Communications was restructured and became the Uzbek Agency of Post and Telecommunications. The later one was reformed into the Agency of Communications and Information;
- The Ministry of External Economic Relations was reformed into Agency of External Economic Relations;
- the State Committee on Land Resources (Goskomzem) was restructured and merged with the Principal Administration of Uzgeodezcadastre to regulate land relations, land monitoring, conduct state land cadastre and control usage and protection of land;
- The Committee on Agrarian, Water and Food and the Committee on Protection of Environment were reformed to develop legislation on environmental protection, land use, natural resources and agriculture;
- The Department of Presidential Advisory Board on Agriculture and Water Issues was established to deal with general monitoring of implementation of agriculture and water issues based on Presidential decrees; Cabinet of Ministers resolutions; Government orders and instructions of the President. The Committee also develops priorities for State policies on agriculture and water management and drafts Presidential decrees and orders and Cabinet of Ministers resolutions/orders or decrees on agricultural and water issues;
- The Ministry for Agriculture merged with the Ministry of Melioration and Water into the Ministry for Agriculture and Water Resources (MAWR) in 1997.

This is a first indication that the formation of the joint Ministry of Agriculture and Water Resources is part of a longer and broader process of state administrative reform.

[25] ADB &Uzbek Ministry for Economy, Report, (2005)
[26] "Current Conditions and Perspectives of Reforming the System of Executive Power in the Republic of Uzbekistan." An internal discussion document prepared by Centre for Economic Research, with Assistance of USAID, Tashkent: 2003: 9.

Reforms in Uzbek agriculture have proceeded since 1994, but in the water sector hardly any reforms were undertaken until 1999, though 95 % water is used for agricultural production. This was because the water management institutions had been organized according to the collective farming requirements and as long as the collective farming system continued the changes in agriculture did not cause major problems for water management. The planning, management and distribution of water and canal management up to the farm level were carried out by the Ministry of Melioration and Water Resources and its regional and district based branches until 1996. In 1997 these responsibilities were undertaken by the MAWR with its regional and district based departments. At the Shirkat level the Rais (director of the Shirkat) assumed the responsibility for the water and canal management within the Shirkat and appointed a Mirab (person who controls inter-farm water distribution) to oversee and control the distribution of water. The continued land reforms and changes in agriculture which led to the privatization of the irrigated lands through a Fermer leasing system, created hundreds of individual farming entities in place of a single Shirkat. This required structural changes in the existing water management system in the republic. A number of problems needed to be addressed: 1) water distribution inefficiency; 2) budget constraints and 3) increased numbers of water users.

Field studies conducted by the WUFMAS and WARMAP-Tacis projects demonstrate, that 15% of all water intake from the resources in the Republic are lost along the inter-farm irrigation system, 48% in the on-farm irrigation system, and 29% of the total losses were due to organizational reasons.[27] The government did not want to spend money from the state budget to finance annual expenses for on-farm system maintenance while the Shirkats were being abolished. There was no obvious organization to take over the Shirkat responsibilities for water. The Mirab was responsible to the Shirkat Rais, and only executed orders give to him by the Rais. The higher level organization was the water bureaucracy (MAWR), but that was only responsible for the water and canal management up to Shirkat level. Something new therefore had to be created roughly at the Shirkat level. According to the officials interviewed at the Ministry of Agriculture and Water Resources this would allow to create a mechanism of water users' influence to achieve fair water distribution, improvement of the quality of on-farm system operation, reduction of operating costs, and would ultimately be a prerequisite for growth of farm incomes. Thus, the first attempt by the government to reform the water sector came in 1999 with the gradual introduction of Water User Associations (WUAs) in the areas where Shirkats were gradually broken into individual farmers.

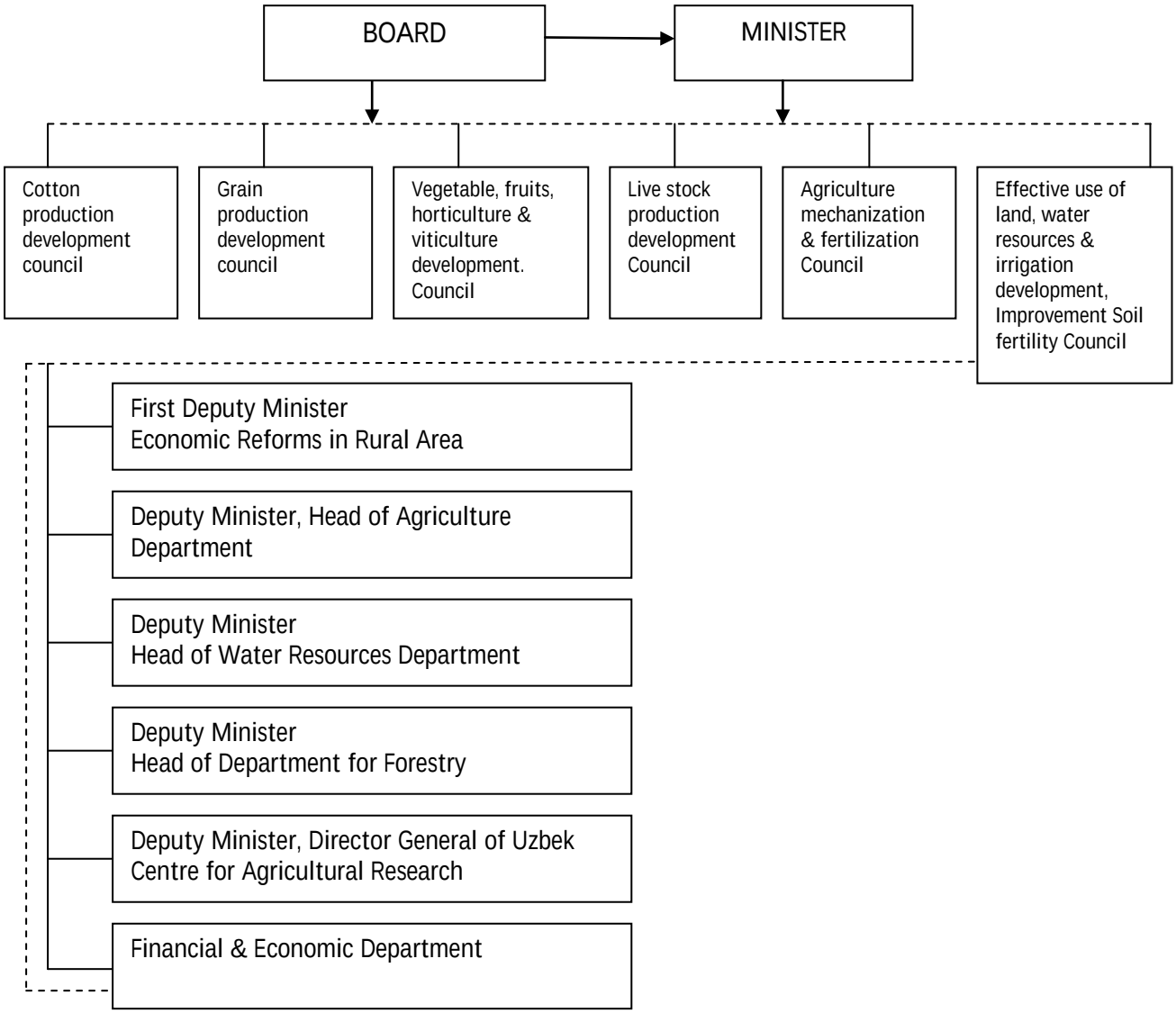
The second part of the official argumentation for the water sector reform that started in 1999 was the government's stated desire to introduce market principles in water management. However, the actual trigger of the 1999 change was, in our assessment, the simultaneous establishment of thousands of individual farmers resulting from the dismemberment of the Shirkats, which practically constituted the urgent need to devise some mechanism for distributing water over smaller farm units. Water pricing and cost recovery questions only started to be concretely taken up by the government very recently. The emergence of the WUAs will be the subject of a separate paper. We now proceed to discuss the merger of the two ministries in more detail.

[27] See for further details ADB &Uzbek Ministry for Economy, Report, 2005: 146

3. The 1997 Merger of the Ministry of Agriculture and Ministry of Melioration and Water Resources

Until 1996 the Ministry of Melioration and Water Resources and the Ministry of Agriculture and Food were serving the agricultural sector as two separate agencies, which was a continuation from the Soviet period. Late 1996 the two ministries were merged, and the Ministry of Agriculture and Water Resources as a new organization, with its new structure shown in figure 1 was created in 1997.

Figure 1 The Organizational Structure of Agriculture and Water Resources Ministry



Source: Ministry of Agriculture and Water Resource, Tashkent. December 2005

Immediately after independence the two ministries, agriculture and water, that were used to receiving orders from higher authorities in Moscow, were suddenly autonomous at the newly independent Uzbekistan state level. The constitution of a new central authority in the form of the Uzbekistan national government, parliament, its President and nation-building processes happened quickly. However, the organizational and institutional translation of this new centrality, while simultaneously designing and implementing a set of reforms, took several years. For agriculture, the centralization process was consolidated in 1996/1997, with the merger of the two ministries. In the intermediate period, 1991-1996, the two ministries of agriculture and water struggled about how land/agriculture and water should be controlled and regulated. During the times of water shortages this would turn into serious power struggles between the agriculture and water departments about who should be controlling the water distributed to various districts and when the distribution should go ahead. The problem was solved by creating a single organization with authority regarding land and water, primarily informed by agricultural production concerns. To explain the merger, we begin by citing reasons given by some of our interviewees.

According to some local scientists interviewed at the Centre for Market Reforms in Agriculture and the Agricultural Science Production Centre in Tashkent, after the break up of the Soviet Union and following the gradual reforms in the agriculture sector 'a single Shirkat in the rural areas of the country suddenly became responsible to ten different managers [meaning different departments, RY &PM] all with different opinions about how to manage a farm. A strong central authority became necessary to initiate structural changes within the management system at the regional and district levels. Under normal conditions, a single manager should be responsible for ten or more farms and not the other way round.'(Interviews 22 and 23 November 2005). This explanation suggests that the disappearance of central authority as exercised by Moscow created a 'governance disorder/vacuum', that is, centralization at Uzbekistan national level was not immediately apparent, and had to be forged anew.

- The director of the Centre for Market Reforms described the merger process of the two ministries as 'in essence the merger of agricultural policies with national politics.' In her view the national politics at that time was very much 'based on achieving grain self-sufficiency for the population; special importance was given to maintaining larger quantities of cotton production as export commodity for hard currency; preventing mass migration of rural workers to urban areas; and achieving desired market reforms in the agriculture sector.' (Interview notes, Tashkent, November 2005). Also this explanation emphasizes the importance of the centralization of governance, that is, in this case, the regulation of agricultural production for national objectives.
- One local expert at the Dispatcher Centre of the Agriculture and Water Ministry described the merger of the two ministries as an arranged marriage. The groom was the Ministry of Agriculture and the bride was the Water Ministry. The groom was looking for this marriage impatiently, but the bride never wanted this to go ahead. Because the groom had the blessings of a strong family (the presidency) the family of the bride was not in a position to resist and had to accept the partnership (Interview at Dispatcher Centre December 2005). This allegoric explanation suggests, in Uzbekistan's masculine culture, that 'agriculture' dominated over 'water', and that 'agriculture' was the primary political concern, with 'water' being subservient to that.
- Some water managers who had been the employee of the former Ministry of Water Resources, but are now employed in other governmental jobs in the lower

delta region of Uzbekistan, stated that the merger took place to take the full autonomy of the Water Ministry away and hand it to the Ministry of Agriculture. (Interviews in Khorazm and Karakalpakistan May, June, October, November 2005; May, July 2006). This explanation suggests that an independent water ministry was a problem to the political leadership, and that main power had to lie with the agriculture ministry.

- The officials at both the departments of Water Resources and Agriculture from the Ministry of Agriculture and Water Resources in Tashkent described the merger of the two ministries as the merger of land and water. Throughout the history of Uzbekistan water and land had always been managed by a single authority until the Soviet rule. Even during the Russian Empire the water and land was controlled by a single authority. So after independence what has happened was a natural process of rejoining land and water. This was a positive and necessary approach for efficient use of land and water in the republic. (Interviews September and November 2005). This explanation takes the need for joint management of land and water as given, and justifies the merger with reference to 'tradition', critiquing the Soviet regime in the process – in full congruence with the way a new Uzbek national identity and ideology is propagated by the government.
- Officials from the agricultural department of the ministry in the delta region argued that the Water Ministry was very important but existed to provide services for agriculture. They stated that in reality it did not have much autonomy before the merger. According to them, water managers sometimes found their ways out of the system, i.e. resisted and sometimes disobeyed the directives from the Ministry of Agriculture during the water distribution to Shirkats and thus, favouring some Shirkats to others as regards access to water during the vegetation season, or would not deliver the water to agriculture enterprises in time. In their view the merger took place to organize a better water distribution system for the water users at the district level. (Interview 27 June, 12 August 2006). This explanation again emphasizes the predominance of agriculture. It also suggests that the water ministry only grudgingly accepted that dominance, and had its own views of how to go about managing water.

The argument regarding the explanation of the merger of the two ministries can be developed a bit further by comparing the perspective outlined above with the explanations presented in Wegerich (2005) – the only other paper we know of on the same subject. Wegerich states the merger took place

> "… to provide better coordination between the water and the agriculture sectors and achieve equitable water distribution…Prior independence the Ministry for water resources was the most powerful Ministry, with the highest allocation of funds and staff. Since independence the power of the department has decreased (p.457) …The merger further reduced the power of the organization (p.458)… The official objective for the merger between the Ministry of Agriculture and the Ministry of Water Resources was to increase efficiency of the agricultural production (p. 458)… Merging the Ministries was supposed to achieve a better coordination and therefore a higher production. For this reason, the merger was decided by presidential decree in 1996 (p.458) …While before the merger the objective of the water resource department was to distribute water equitably, within the new structure the departmental objective was sacrificed to the objective of the agricultural department, which was to fulfill the state-order (p. 459) …The merger took the autonomy of the water ministry and diminished its political power (p.461-62)."

Where we agree with Wegerich is that the merger sought to achieve better coordination between agricultural and water management. But we disagree with several other elements of his explanation. We have suggested above that the autonomy of the water ministry as regards water management in the years after independence was a temporary situation, created by the falling away of Moscow's central authority as regards both agriculture and water, and the time needed to consolidate the new central authority of the Uzbekistan government and translate it into organizational/administrative structures. In our interpretation the power of the water ministry has always been limited as regards water management at irrigation system level, that is, subordinated to agricultural planning /production concerns.[28] Suggesting that a 'classical' power struggle between water and agricultural ministries[29] drives the evolution of their relationship, misinterprets the position of these two ministries in the Soviet political economy, as well as the post-Soviet Uzbekistan one. This competition of Ministries may be the projection of the implicit biases of Western policy analysis frameworks.

A second point of disagreement regards Wegerich's statements on the budget and staffing characteristics of the two Ministries. The statistics we found show that not the Water Ministry but the Ministry of Agriculture seems to have been the larger ministry, both in terms of its budget and of its staff. To give one example as illustration, before independence the number of staff of the Agriculture Ministry at the central office in Tashkent were 621 people and the number of staff of the Water Ministry were 300 people (Cabinet of Ministers Decree Nos: 376, 16 November 1989; 5, 11 January 1991). And immediately after the independence the national budget statistics show that the Water Ministry spent about 9 %, while the Agriculture Ministry

[28] The water sector was established as a separate sector by the Soviet state in 1928 and placed in service of the agricultural production in Uzbekistan, mainly to serve cotton monoculture. During the Soviet Union water resources in Central Asia were managed by a centrally controlled Water Ministry in Moscow. The Ministry of Melioration and Water Resources in Uzbekistan was a subunit of this Ministry (see Abdullaev 2005; Ranger, 1998)). The ministry in Uzbekistan was also looking after some of the regional water issues such as: interstate canals transporting water from Uzbekistan to Turkmenistan; looking after the Tuyamuyun Reservoir complex, which was and still is an interstate shared water storage complex and also took care/ is still taking care of the shared water storage facilities in the Fergana Valley. After the break up of the Union the operation and maintenance of all the surface water resources in Uzbekistan was transferred to the Ministry in Tashkent with its regional and district based offices. The Water Ministry was undoubtedly a powerful Ministry in the Soviet period. We would suggest, speculatively, that this mainly had to do with its responsibility for infrastructure construction/irrigation expansion, concentrated in the 1950s-1970s periods (the Soviet version of a water bureaucracy implementing its 'hydraulic mission', see Allan (2006)). Its power must have derived from the strategic importance of this construction/expansion and the large amounts of investment funds used for it. However, the driving force of this was expansion of agricultural, notably cotton, production. Therefore, even in this period agriculture was the overriding Soviet political concern. See for example ADB, 1997; Khan 1996. In 1991, the hydraulic mission seems to have been largely completed. In fact, in the 1980s little irrigation expansion and dam building took place. After the Tuyamuyun reservoir complex was completed in 1983 no further large scale construction took place. (See for example Abdulaev, 2005; SIC of ICWC report 1999). Engineers were considering water transfer from outside the region, indicating that the limits of regional development of water resources were in sight (Interfax News Agency, April 10, 2002). Moreover, the Soviet period water resources development strategy was regional, Central Asia focussed, including the present neighbouring countries in the Aral Basin (See. Sadikov 1979; Ranger, 1998). The jurisdiction of the Water Ministry located in Tashkent covered part of the Central Asia region, beyond Uzbekistan. At independence this jurisdiction got 'carved up.' What was a centrally planned water management scheme designed to operate within a single national political economy became a hydro-system under the jurisdiction of five independent states with the break up of the USSR and spread over the new sovereign countries, which in itself has reduced its effectiveness, through brain drain to Russia and other factors, as well as its power. It also more or less nullified the possibility of new infrastructure construction – as opportunities for these mostly lay in dam-building to optimise regional water storage management (that is, basin management) and regional water transfers. The new transboundary water allocation issue has been characterised by freezing of existing allocations from the Soviet period, that is political deadlock (see O'Hara 1998; International Crisis Group Report No. 34, 2002). Throughout this period water management in the existing irrigation systems was an instrument to achieve the agricultural production targets. This argumentation is largely by inference, and would require more research for confirmation.

[29] A description of such a power struggle for the case of Mexico can be found in Rap et al. (2004)

spent about 11 % of the total national budget. (Data collected from the Ministry of Finance through personal communication).

A third point of disagreement is on the issue of equitable water distribution. Our impression from the information obtained through the discussions and interviews conducted for the field research as well as from our observations on various fields in the lower delta of the Amu Darya River Basin are that 'equity' in a normative sense is not the main concern in Uzbekistan. The main concern is the distribution of water to state ordered agricultural crops, mainly the cotton and wheat production. The objective to spread water equitably geographically speaking, derives from a concern to maximize cotton and wheat production (and probably a concern to avoid social unrest and economic loss caused by regionally skewed water distribution, as happened in the drought years of 2000 and 2001) – not from a normative concern. There is an equal concern regarding the needs of fish ponds or drinking water. But such concerns, in our assessment, did not drive the merger. Equitable water distribution is not a stated concern in the official decrees which merged the two ministries either.[30]

In addition to these structural considerations explaining the merger of the two Ministries, there are agency factors, related to political and economic expediency and contingency. President Islom Karimov on his return from an official visit to Holland in 1993, where he was briefed about the work, production, and management system of the Dutch agricultural sector, ordered his advisors responsible for agriculture to 'check why Uzbekistan employs so many people in the agriculture sector and yet, the production and the quality of the products were so poor, while Holland employed only 3 % of its population and yet the production was in so good quality'(interview notes Dispatcher Centre, December 2005). In response to this, the presidential advisors in charge for the water and agriculture sectors sent a message of warning to the responsible state organizations that the presidency was very much concerned that there was excessive employment in the organizations accountable for the agriculture sector. Because the Uzbek political system is based on a command and control management system, the message raised serious concerns starting right from the ministries in the capital down to the farms at the district levels. As a result, thousands of people from both water and the agriculture sectors lost their jobs in 1993-95, but those who were qualified employees were transferred to other government jobs. According to data collected from the Dispatcher Centre (department of the Ministry responsible for the data collection and information exchange/distribution between various departments of the MAWR) in 1993 the total number of people working for the Water Ministry, republic-wide were 135,000 and total number of people working for Agriculture Ministry were about 500,000.[31] In 1996 just before the merger the total numbers of people working for the Water Ministry were reduced to 32,000 people and those working for the Agriculture Ministry were reduced to 150,000 people. After the merger these numbers declined further (see the first additional decree to No: 11, 1996 to the Cabinet of Ministers No: 419, 26 January 1996; Order of MAWR No: 313, 1 November 1997). The decline in the employment of the two ministries caused a low morale among those who remained in the sectors at the region and district levels and subsequently affected negatively the agricultural production in the collective farms (interview notes at Dispatcher Centre, Tashkent; at Central Asia Natural Resources Management Programme and UNDP; Centre on WUAs at Hydromet). It is difficult to check the claim of declining production as being caused by lowering morale, but that production stagnated is supported by available statistics.[32] We

[30] Neither the 1996 Presidential nor the Cabinet of Ministers decree which ordered the restructuring of the two ministries specifically refers to the 'equity' issue.

[31] These numbers are so high because they also include the employees and managers at the Kolkhoz and Sovkhoz level. Under the collective operative system these units belonged to the state apparatus.

[32] See IMF Uzbekistan Country Report 1997; EIU Uzbekistan Country Review 1997-; Taube and Zettelmeyer (1998).

have been told quite often that the Agriculture Ministry blamed the Ministry of Water Resources and the Water Ministry would put the blame on the Agriculture Ministry for the low production. (Interview notes, 24 May 2005; 25 May 2005; 29 May 2006). Stagnating or declining agricultural production added to the rationale for centralization of control.

One factor driving the merger may have been the Water Ministry's response to financial constraints. Article 6 of the Law of the Republic of Uzbekistan "On water and water management" adopted on 6 May 1993, states that the water resource pricing is under the competence of the Cabinet of Ministers of the Republic of Uzbekistan. In 1994 the Ministry for Melioration and Water Resources of the Republic of Uzbekistan developed proposals to introduce charges for water supply starting from 1995 for all organizations, institutions and enterprises, regardless of their departmental belonging, pattern of ownership and funding source. A double-rate tariff was provided for agricultural water users: per hectare (for land under irrigation) and per cubic meter. The payment tariffs were established per ha and per m^3 with differentiation following a regional breakdown. However, due to the number of external reasons, these proposals have not been introduced.[33] The rejection of the water tariffs by the Agriculture Ministry in particular and subsequently by other ministries which were to be affected by the tariffs, led to further frictions between these institutions and the Water Ministry in 1995.

In 1995-1996 there were a number of supporters of the merger in influential, powerful positions in the government. The head of the Ministry of Agriculture was a first deputy Prime Minister, politically speaking the third man in the country's power hierarchy. The then Minister of Agriculture Qobiljon Obidov, who was in favour of a single centralized authority used every opportunity among high level political actors to campaign for the merger of the two ministries. The Prime Minister Otkir Sultanov, also from an agricultural background, and his deputy Ismail Jurabekov, a former water minister, were also in favour of a single centralized authority for the water and agriculture sectors.

As part of state-building process the Uzbek Government had set up a committee headed by the Minister of Economy to study the activities of several government departments, among which were also the Ministry of Agriculture and Food, and Ministry of Melioration and Water Resources. The conclusions of the Report prepared by this committee regarding the two ministries 'was rather negative and specifically stated that the two ministries were doing similar jobs and yet each of them received a large amount of money from the national budget, and thus it questioned the existence of the ministries as two separate institutions' (Interview notes from the Ministry of Economy). This development tipped the debate in favour of those supporting the merger. However, soon after the Ministry of Economy completed its report, the Minister of Water Resources, who was initially against the merger, is said to have sent a letter to President Karimov asking for the merger of the two Ministries. He even became the Minister of the merged Ministry for a short period.

We conclude as follows. In the first years after 1991 the political elites in Uzbekistan developed a new national ideology of independence to create a conceptual scheme for internal politics; to give it direction and to correct it during the process of development in accordance with established purposes.[34] Internal politics implies that the state builds a new political system, and establishes new political institutions by reforming the old one to harmoniously fit the structure of the national culture and correspond to the national spirit (See Karimov 1993:89; 1995:173-7). The continuation of highly centralized governance and control of societal process was part of this conceptual scheme. However, the Moscow-based centralized governance and

[33] ADB &Uzbek Ministry for Economy, Report, 2005: 147
[34] For further discussion see Yalcin, 2002:85-92

control system fell away at independence, requiring substantial socio-economic and organizational/administrative adaptation. The merger of the agriculture and water ministries has to be seen in this light. It reproduces the centrality of agricultural planning of the soviet period at the level of the new independent state of Uzbekistan[35], part of which is a 'rationalization' of the bureaucracy in terms of staffing pattern and budget allocation, triggered by the financially and economically dire straits that Uzbekistan landed in after independence[36]. The 1991-1996 period seems to have suggested to the Uzbek political leadership that two separate ministries without firm 'guidance' by the agricultural production interest was a problematic configuration. In terms of the process leading to the merger of the water and agriculture ministries, the decisive moment seems to have been the report prepared by the committee headed by Rustam Azimov, the then Minister of Economy, complaining about the overlapping of tasks of the two ministries and the amount of money spent from the state budget for these overlapping tasks performed by the two separate organisations. Rustam Azimov is a highly influential personality within the Uzbek bureaucracy and had the capacity to influence the president. However, it may also have been the case that President Karimov had developed the idea of a centralized management system for the two sectors as he was aware of the issues, and set up the committee within the Ministry of Economy as part of an implementation strategy to merge the ministries, with the objective to broaden the base and legitimacy of this critique within government, and thus to counteract the then Minister of Melioration and Water Resources, who was a high level politician with extensive formal and informal power, but initially not in favour of the merger. This account illustrates the complex mix of interests of organizations, viewpoints regarding a policy issue, and individual interest and agency, which, given the personalized nature of 'state-centric' internal government politics, are very difficult to disentangle – also for those directly involved.

4. The 2003 Separation of Tasks

To improve water resources management in the country and speed up the reforms in agriculture the Uzbek President issued decree no. UP - 3226 of 24 March 2003, and following the Presidential decree the Cabinet of Ministers on 21 July 2003 adopted decree No.320 to restructure the existing water resources management system from an administrative-territorial based management to a basin based water resources management system. Based on the principles of the Presidential decree, the Cabinet of Ministers issued the following:

> "Accepting a proposal from the Ministry of Agriculture and Water Resources, Ministry of Economy and Ministry of Finance of Uzbekistan about creating below mentioned Irrigation Basin System Authorities under the organizational structures of the water resources department of the Ministry of Agriculture and Water resources of Uzbekistan and its territorial subdivisions the following 11 main entities with their further subdivisions specified in the decree's appendixes nos. 2, 3, 4, 4a, 4b, 5, 5a and 5b shall be created".[37]

[35] One very important adaptation was the expansion of wheat cultivation to achieve national food self-sufficiency, as not only investment funds for infrastructure development, but also the provision of wheat by Moscow stopped. (See World Bank Uzbekistan Country Reports 1993 &1996; ADB 1997& 1996; Khan, 1996; Hunter, 1996). This further underpins the political centrality of agricultural planning, in addition to the continuing importance of cotton cultivation for foreign exchange earnings and otherwise.

[36] For analysis of the economic implications of independence and how Uzbekistan dealt with these, see ADB, 1996; Spoor, 2004.

[37] An English translation text of the Russian version of the decrees was provided by the Central Asia Natural Resources Management Program, at the Hydromet Centre, supported by the USAID.

The main Irrigation Basin Management Authorities created by the Cabinet of Ministers' Decree No. 320 of 21 July 2003 are:

1. Norin-Karadarya Irrigation System Basin Management Authority
2. Norin-Sirdarya Irrigation System Basin Management Authority
3. Sirdarya-Soh Irrigation System Basin Management Authority
4. Lower Sirdarya Irrigation System Basin Management Authority
5. Chirchik-Akhangaran Irrigation System Basin Management Authority
6. Amu-Surkhan Irrigation System Basin Management Authority
7. Amu-Kashkadarya Irrigation System Basin Management Authority
8. Amu-Bukhara Irrigation System Basin Management Authority
9. Lower Amudarya Irrigation System Basin Management Authority
10. Zarafshan Irrigation System Basin Management Authority
11. Main Canal Authority for Fergana Valley with unified dispatch centre

The newly created administrative system abolished the 13 region (viloyat) based (including the autonomous republic of Karakalapkistan) and 163 district (tuman) based water management departments, and more than 40 management organizations of inter-district canals and other water-sector organizations of the MAWR, which were established under the reorganized regional and district departments of the same ministry in 1997. The 13 region based main water and canal management departments are now replaced by ten main water and one main canal irrigation basin management authority. The 163 district based departments have been replaced by 52 subdivided offices of the irrigation basin management authorities. This change and reorganization in the water sector was engineered by the then Deputy Minister of Agriculture and Water Resources Abdurakhim Jalalov. He was a former bureaucrat of the old Ministry of Melioration and Water Resources. He worked very closely with the international donor organizations operating in Uzbekistan and participated in almost all national and international water seminars and conferences throughout his tenure as a Minister responsible for water resources in Uzbekistan (1999-2004).

Jalalov's role in designing and driving the reform is an example that supports Grindle's (1999) argument that 'leadership' and 'ideas' can be an important element in policy transformation processes, but are often underemphasized. In the end he managed to convince the authorities in Uzbekistan that their country and some other countries in Central Asia are the only countries in the world still continuing to manage the irrigation system according to the administrative-territorial approaches and anywhere else in the world the system was based on the hydrological principles.[38] Jalalov argued further that because of the intensification of market reforms and restructuring going on in the agricultural sector, it was necessary to review the existing system of vertical water resources management. He, working actively in close cooperation with the international donors in Uzbekistan and with the Ministry of Economy and Ministry of Finance, initiated a proposal to restructure the Uzbek irrigation management system and submitted it to the Cabinet of Ministers in early 2003. The international donors hoping to

[38] See Jalalov 2003. He also expressed similar comments during an interview

achieve a decentralized system of water management designed additional proposals to support the change.[39] However, the outcome was that centralization reappeared yet in a different form.

The new system is equally centralized with control located in Tashkent. The new water management organizations are directly responsible to the water resources department of the MAWR in Tashkent, headed by one of the deputies of the Minister responsible for water resources management throughout Uzbekistan. The difference is that the irrigation basin management organizations are no longer directly responsible to the local governors (hokims) and regional (viloyat) and district (tuman) offices of the MAWR, but are directly responsible to the water resources department of the MAWR in Tashkent. The heads of these irrigation system basin management authorities are appointed and/or selected by the Minister of Agriculture and Water Resources, and thus coordination between and dominance of the agricultural planning interest remains.

How to understand this move to change the irrigation management system in Uzbekistan? The change should not be seen as a move towards the separation of the Ministry of Water from the Ministry of Agriculture, that is, as a de-merger process. It should rather be seen as a separation of tasks within a single ministry. It has also been a move of the MAWR as a whole to reduce its dependency on hokims influence.[40] In May 2006 the regional department of MAWR in Khorezm was also physically separated from the hokimiyots building and moved to a different part of Urgench city. We therefore hypothesise that the reform of the organizational structure of irrigation management has to be understood in the context of broader, and longer-term changes in the nature of the overall governance system, to 'depoliticise' certain sectors to achieve more effective and efficient planning and management while maintaining centralized control.[41]

The logic of the organizational change was fed by the actual practice of agricultural and water management 'on the ground' at the regional level. Water resources management, allocation and use pre-2003 were under the operational control of MAWR province and district level offices, as well as under the frequent interference of the local authorities (hokimiyots). This approach to water management led to a peculiar polycentric[42] management system creating an atmosphere of frictions and conflicts of interests between agricultural enterprises, water and agricultural institutions and the local authorities. All the existing institutions at the local level considered themselves to be responsible for agriculture, water and canal management.[43] This reinforced the arbitrary interference of the local hokims (governors) in the day-to-day

[39] This information was provided during an interview at the Central Asia Natural Resources Management Centre at Hydromet, Tashkent, June 2005.

[40] This move towards separating 'functional' and 'political' governance in irrigation water management is similar to the process of irrigation reform in PR China, as discussed in Mollinga et al. (2004). Part of the parallel is, interestingly, the role of foreign donors, who push management models inspired by 'society centric' views of water governance, notably the establishment of Water Users Associations as independent, non-state, irrigator-governed bodies that can 'participate' for enhancing system performance. In both the PR China and Uzbekistan cases the government seems to have taken careful note of such ideas and subsequently adapted them to 'local conditions'. The issue of WUAs will be further explored in a separate paper.

[41] Also at this more general level there is parallel with PR China – the increasing role of 'technocrats' in PR China's governance while maintaining centralised political control. See for example, Pomfret (1998).

[42] Under what conditions polycentric management/governance can become a successful management system see Huitema et al. (forthcoming). Also for a detailed discussion of polycentric management/governance see Ostrom, (2005), (2001); Ostrom, Tiebout and Warren (1961).

[43] One official from the water department of the ministry stated that all money allocated for the operation and maintenance of the water resources at the province level was not used for water but spent on agriculture. If true, it both illustrates the dominance of agriculture, and a rationale for separating tasks within the ministry for effectiveness reasons. However, we were unable to verify the statement.

management of water resources at the province and district level preventing balanced distribution of water to all the provinces and/or districts. This became particularly pronounced during the water deficit years of 1999-2000 and 2000-2001.[44] The central authorities had to break the power of hokims over the water management to reduce the competition between the districts over water distribution.

The Deputy Minister of Agriculture and Water Resources, Abdurakhim Jalalov responsible for water management took the advantage of the existing atmosphere of change and promoted the idea of transforming the territorial-administrative water management system extant since the creation of the Soviet Union, into an irrigation basin water management system based on hydrological principles in a centralized fashion. The 'hydrological principle' as unit of organisation also was in accordance with the principles adopted by the Inter-State Committee for Water Coordination (ICWC). The discussions at that level produced legitimacy for a system of water management in Central Asia organised on this principle. In response to Jalalov's active involvement in the decision-making processes, the government introduced a separation of tasks within a single ministry to establish clear lines of responsibility between agriculture managers and water managers. The structures of the newly created Irrigation Basin System and Canal Management Authorities are provided in the appendixes.[45]

5. Conclusion

The Ministry of Melioration and Water Resources of Uzbekistan had been created in the framework of the former USSR with a single water strategy designed by the Soviet Central Authority in Moscow for the whole of Central Asia. There had been plans to develop continuously the irrigation system in Uzbekistan further aiming to produce about 10 million tones of cotton annually for the Soviet Union. The rivers and infrastructure complexes such as

[44] The droughts of 2000 and 2001 demonstrated clearly the difficulties of balancing distribution of water over regions and districts in the drought years due to the existing system. During these droughts years several regions and many districts did not receive the amount of water which had been allocated to them. One of the reasons for this was that the water management and distribution were undertaken by region and district based offices of the Ministry of Agriculture and Water Resources and when the droughts created deficits in the water supply, the regions and districts simply ignored the allocation and the limits assigned to them by the central authority, but engaged in a bitter struggle with each other to take as much water as they could. Therefore the stronger and/or upstream regions or districts basically managed to take water far more than what had been allocated to them, but those weaker and downstream ones did not get enough, even some did not get any water at all and as a result lost all their crops. (Hayashi, 2005; Abdullaev 2005) In the downstream regions thousands of livestock heads died. The crop and the livestock losses country-wide, in monetary terms, were several billions of Uzbek Syums (with 1000 Syums equalling approximately 1 USD).

[45] In addition, the intensified reforms and on-going restructuring processes within agriculture at the district level required a review of the existing system for water management, because the old structures could no longer respond adequately to the new demands. The conversion of the *Shirkats* into hundreds of individual farms and the simultaneous creation of hundreds of Water User Associations increased confusion and complicated the system of district based water distribution. The hydrological principle was also introduced in the already on-going WUA programme, which had started using territorial units.

reservoirs, canals and pumping stations within Uzbekistan and outside the Uzbek borders were considered by the USSR as national resources. Several reservoirs, pumping stations, huge inter-state irrigation canals and drainage infrastructure within Uzbekistan were managed by the Uzbek Ministry of Melioration and Water Resources, but also served other Central Asian countries and vice versa. After the break up of the Soviet Union, the Ministry of Melioration and Water Resources in Uzbekistan maintained its old Soviet structure until 1996, while the conditions in the region had changed considerably. The national rivers (such as Amu Darya and Syr Darya) in 1991 became international rivers and many of the infrastructure complexes remained outside the national borders of Uzbekistan, while some remaining within the national borders were operated for a 'foreign' country. Previously there was one water strategy for the USSR, after independence each country in Central Asia developed its own national water strategy.

Agriculture during the Soviet Union was organized and managed by the Communist Party in Moscow and was given special importance because of the revenue the agriculture generated for the economy of the former USSR. The water sector was organized to facilitate agricultural production and consequently it has always played a secondary role. Water management as an organization is solely meant to serve agriculture and agricultural production through the massive irrigation infrastructure created in the Soviet period. Organizationally water management was shaped in accordance with the collective agricultural requirements during the Soviet times. Since independence it has gone through several reform processes, but the state order for crop production always remained. One of the main aims of the Ministry of Agriculture and Water Resources at present is 'to implement the government's agricultural policies for achieving the state ordered crop production quotas, namely cotton and wheat production' (See Cabinet of Ministers Degree Nos: 376, 16 November 1989; 5, 11 January 1991 and No. 419, 26 November, 1996:21-29.[46]

Following the adoption of the Cabinet of Ministers Decree No. 419 on 26 November 1996 the two former separate ministries, the Ministry of Agriculture and the Ministry of Melioration and Water Management of Uzbekistan were officially abolished, and in their place a new centralized single institution - the Ministry of Agriculture and Water Resources (MAWR) of Uzbekistan, was established to oversee all the functions and the works of the two abolished ministries throughout the republic. The actual establishment of the new Ministry took place in 1997 including regional (viloyat) and district (tuman) based departments. Similarly, the structures of the Ministry of Agriculture and Water Resources of the Karakalpakstan Autonomous Republic, with its regional and district agricultural and water management departments, was created and placed under the central ministry in Tashkent.

Another change in organizational setup happened six years later. In pursuance of the Presidential decree on deepening economic reforms in agriculture, on 21 July 2003 the region and district based administrative water management system, extant since the creation of the old Soviet system, were transformed into an irrigation basin water management system based on the hydrological principles. Unlike the organizations established in 1996-1997, these irrigation basin management organizations are, administratively speaking, not directly responsible to the local governors (hokims) or to the regional (viloyat) and district (tuman) offices of the MAWR, but are directly responsible to the water resources department of the MAWR in Tashkent.

[46] This view was also confirmed by several national and international observers during the discussions of International donors meeting in Tashkent in June 2005.

With the continuity of the type of political regime after independence came continuity in the 'design principles' of the administrative structures of government.[47] Rather than a transformational approach, gradual restructuring of institutions and organizations was the more attractive option for the political heirs of Soviet power. The Uzbekistan leadership does not want to allow any reform process leading to social and political turmoil and reforms were initiated step-by-step through centrally controlled experimentation. Without exaggerating too much, it can be stated that a characteristic of the present regime is that if there is a problem anywhere in the system, the basic response is strengthening central authority. A highly centralized and statist system depended on the state subsidies, protected from competition and shackled by a large and inefficient bureaucracy, is a sure obstacle against, and would not give itself easily to serial alterations of institution building when called for by external or internal developments and therefore carefulness in reforms is the unavoidable process. Moreover, without appropriate preparation and the creation of effective mechanisms of support for the institutions, the process of radical change would aggravate the institutional failures and make the system more resistant to reform. The changes are undertaken through centrally controlled experimentation and thus, any failure in the reforms increases scepticism towards changes in the system. Without drastic political changes displacement of such a bureaucracy is highly unlikely.

Our explanation of the organizational change in 1996-1997 is that the merger of the two ministries was part of a broader policy process of changing institutions and organizations in the post-independence state-building process. The merger recreated the dominance of agricultural production concerns in national planning, to which water management was to be subservient. With Moscow's dominance falling away, the Uzbek organizational structure of land and water management needed to be adapted in this respect. This is what the 1996-1997 merger effectuated. The merger in our view was not determined primarily by the idea of achieving equitable water distribution as a normative principle and creating two equally important departments within one ministry as Wegerich (2005) suggests. If we are to mention a single moment that practically triggered the merger, that is the report prepared by a committee headed by Rustam Azimov the then Minister of Economy complaining about the overlapping tasks of the two ministries and the amount of money spent from the state budget for the overlapping tasks performed by the two separate institutions. The reform thus also resonated with another major national government concern – the economic problems, if not crisis, and the related perceived need to reduce government expenditure.

The second organizational change that the study has analysed is the transformation of the territorial-administrative water management system extant since the creation of the Soviet Union, into an irrigation basin system management authority based on the hydrological principles. There are, in our analysis, two related dimensions to this. The first is that it amounts to a better division of tasks within MAWR between agricultural and water management organizations – better in the sense of being more effective because avoiding some of the competency issues that played out at the operational, regional and district, level. The second was the desire of the central authorities to separate water management off from the authority of hokims (regional/district governors). Their role in water management in the scarce years of 2000 and 2001 had resulted in a highly skewed distribution of water along the Amu Darya (as well as Syr Darya), with enormous economic losses as a result. Central authorities therefore saw

[47] The continuation of organisational forms and styles is also not uncommon when the nature of the political regime changes, as many examples of decolonisation processes would illustrate. India is a case in point: at independence it was decided not to institutionally reform the bureaucracy and army for reasons of political stability and others (see Kaviraj, 1997) One could argue that the decolonisation process of Uzbekistan is as yet incomplete.

the rationale for direct, centralized control of water management, which is what the organizational change amounts to.

In terms of process, Abdurakhim Jalalov's personally driven four-year policy initiative within the Uzbek bureaucracy to modernise the Uzbekistan irrigation management system was instrumental in bringing about the transformation. We disagree with Wegerich's analysis that the 2003 organizational change should be understood as a move towards the separation off of the Ministry of Water from the Ministry of Agriculture, that is, as a 'de-merger process.' (Wegerich 2005: 462). It should rather be seen as a separation of tasks within a single ministry, and a movement in the direction of separating of 'functional/technocratic' governance and political governance at the operational level. More generally, and more speculatively, it may be interpreted as illustrating the emergence of a development trajectory that tries to combine economic and technological growth and modernization with the maintenance of high degrees of centralized political control. We drew a parallel with PR China in this respect.

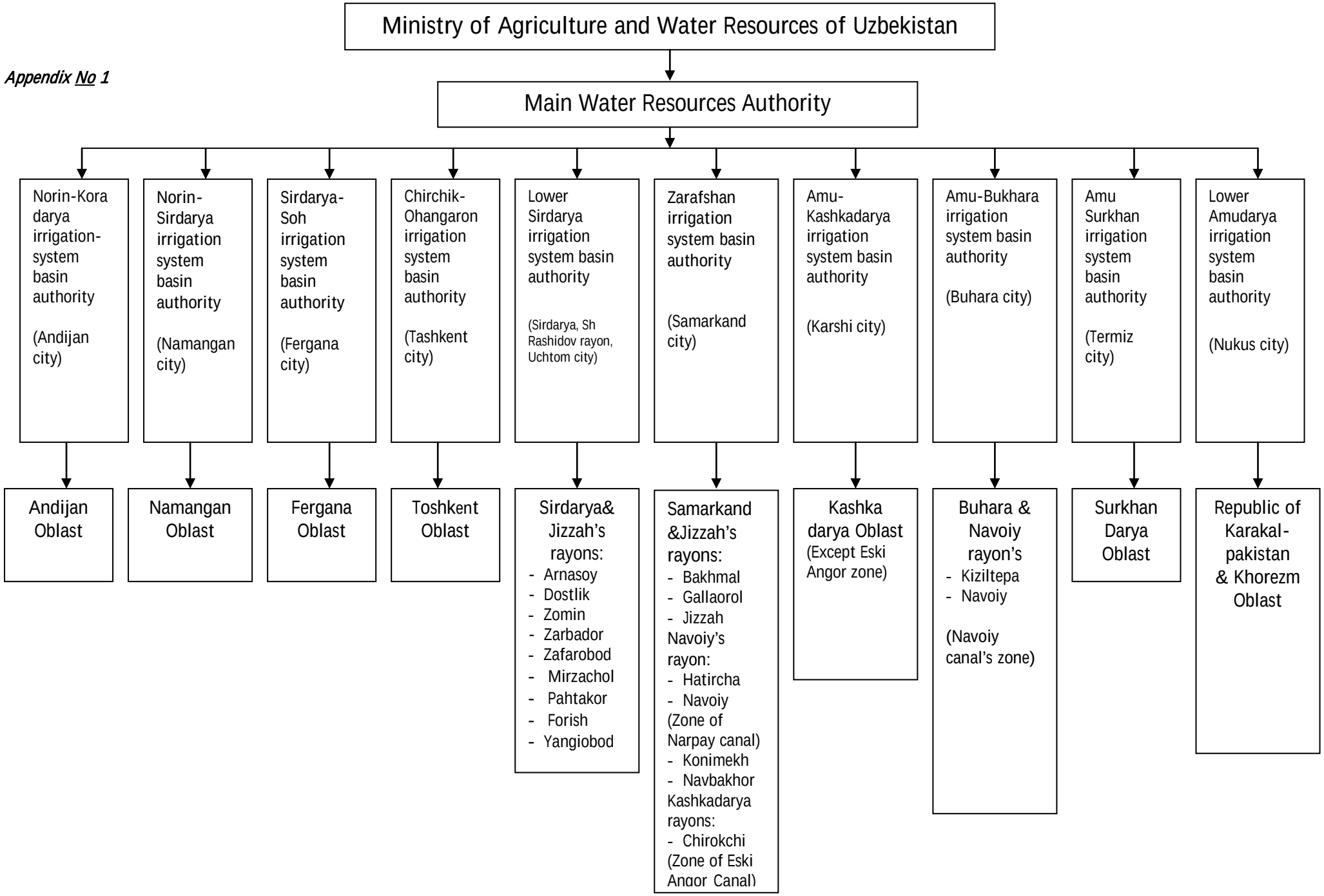
The theoretical question the paper explored is the analysis of administrative and policy reform processes in what Grindle (1999) has called a situation of 'state-centric policy process', in contrast to 'society-centric policy process' situation. Our conclusions in this respect are the following.

- Policy initiatives in Uzbekistan indeed emerge within the official bureaucracy and largely reflect the actions and perceptions of elites within the government. They do not emerge in the public domain, which is highly circumscribed to begin with. This means that analytical frameworks that implicitly or explicitly take 'society-centric politics' as their point of reference are of limited value to understand Uzbekistan's policy dynamics.
- The Uzbekistan intra-government policy process is highly personalized, but its successful outcome depends very much on achieving collective decision making within the bureaucracy, that is a 'political alignment'. The methodological implication is that policy emergence, articulation and transformation is very difficult to investigate for outside researchers. It is also analytically difficult because 'structure' and 'agency' dimensions are highly intertwined, and maybe not discernable. Grindle's suggestion that there would be merit in putting larger emphasis in policy studies on the importance of 'leadership' and 'ideas' in policy processes seems very relevant to the Uzbekistan case.
- Within the Uzbek bureaucracy there are certainly interest groups, involved in extensive consultation, negotiation, consensus building and sometimes bargaining between elites and various government departments for a policy or an institutional change. In a very broad stroke, we suggest that further research on the political economy of land and water governance reform might fruitfully look at which sections of the government apparatus support and drive a 'modernisation' agenda that attempts to isolate 'functional' governance from 'political' governance at the operational level, and how this relates to the maintenance of centralised political control of the society at large. Provisionally we conclude that there is 'more agency than meets the eye', that is, that statements about the 'basically' or 'fundamentally' authoritarian, centralised and hierarchical nature of Uzbek state governance may easily be too simplistic, and overlook how policy and reform dynamics plays out within the government structure. Such simplification may be as much a reflection of methodological difficulty to investigate that internal dynamics, as of the posited absence of it.

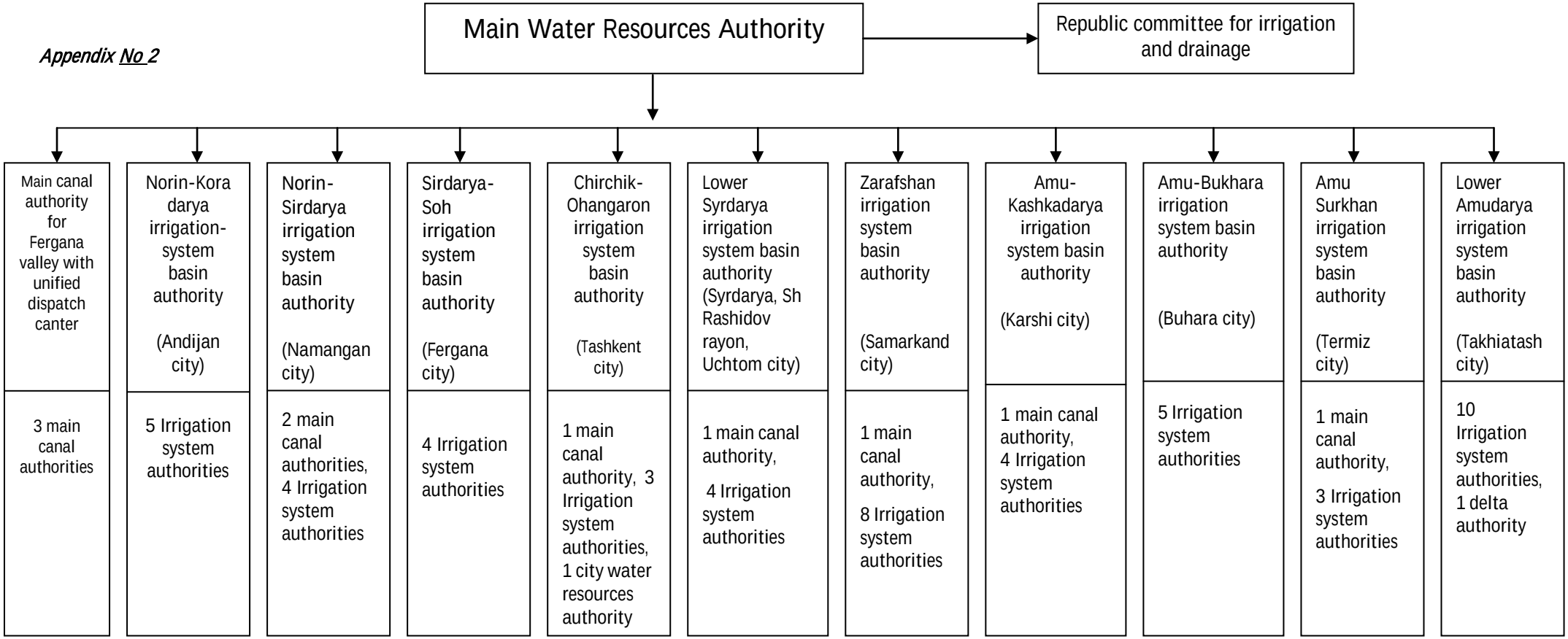
- The international supporters of the reform process in the agriculture were hoping that the restructuring could lead to a decentralized water management system at the province and district levels. They were probably naïve to think that it was possible to introduce a decentralized system at the local level in spite of a highly centralized national system, or they underestimated the 'adaptive capacity' of the Uzbekistan system, or were insufficiently aware of the 'society-centric' assumptions inherent in their proposals, for establishing Water Users Associations for instance, or they were aware of all this and more, and decided that this would be the best way to enhance reform. This is an issue we will explore further in a subsequent paper on WUAs.

6. Appendices

Appendix No 1

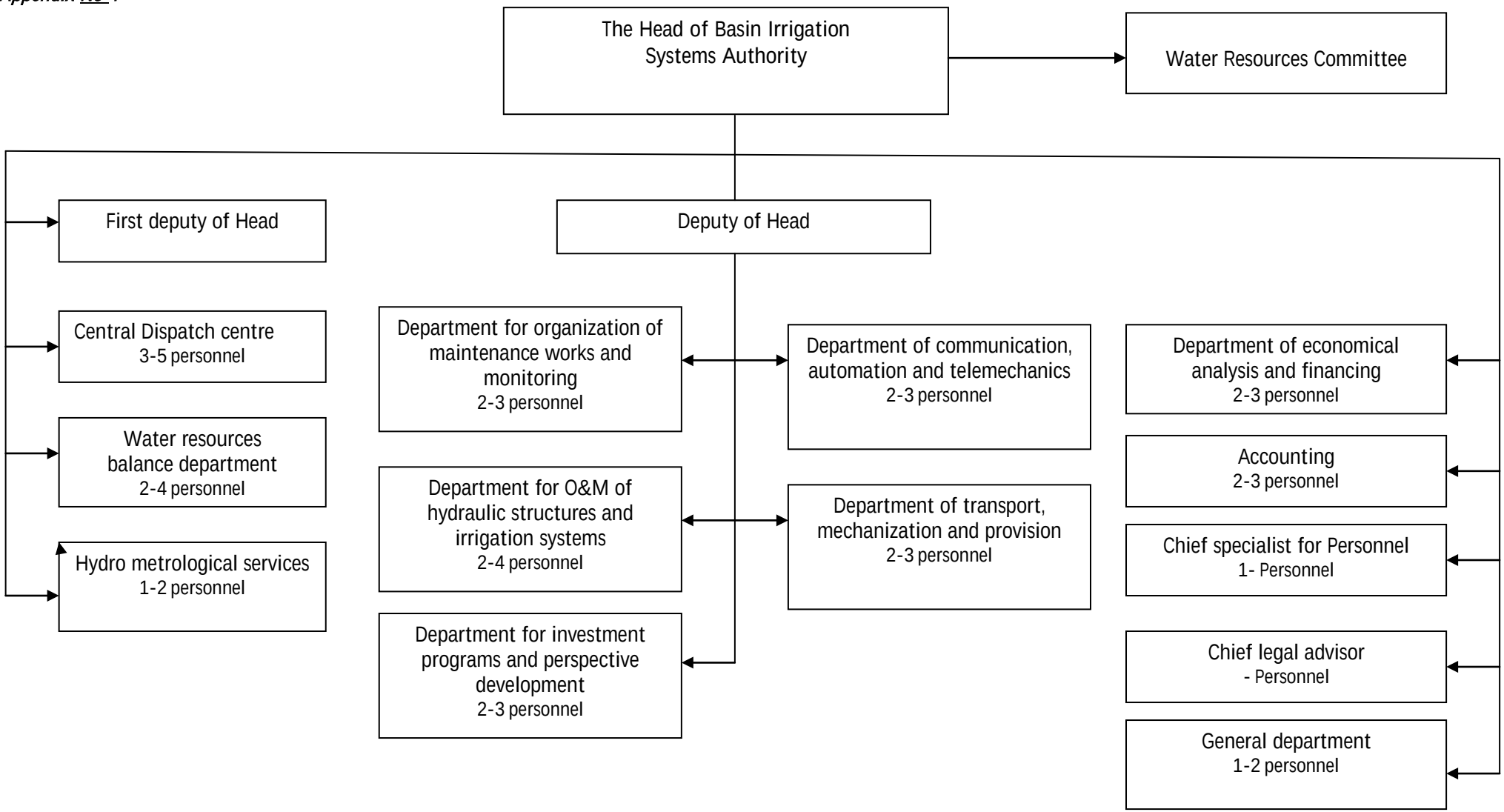


Appendix No 2



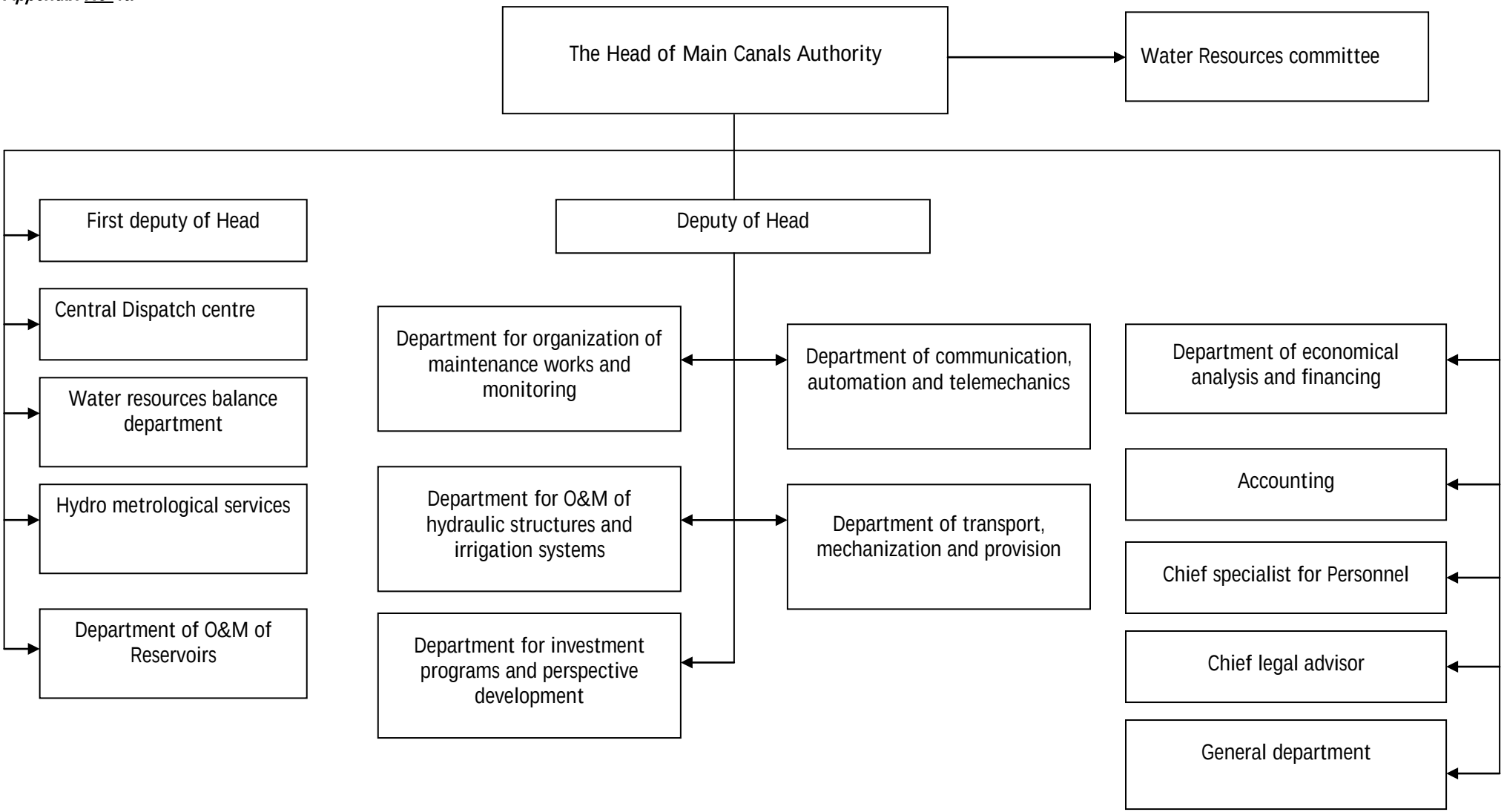
Structure of Basin Irrigation System Authority

Appendix No 4



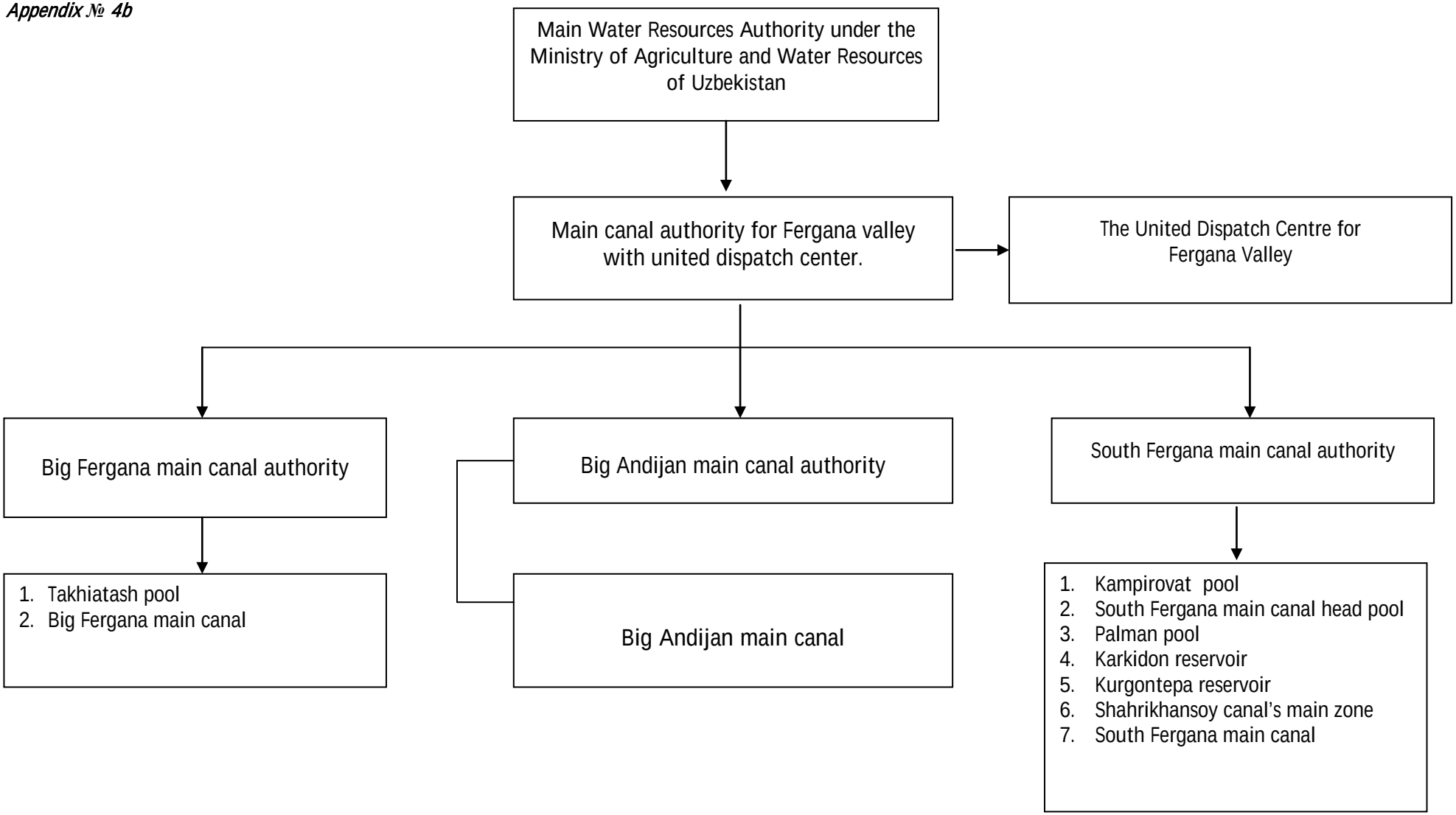
Structure of Main canals authority

Appendix No 4a



The Structure of Main Canal Authority for Fergana Valley with united Dispatch Centre

Appendix № 4b



Appendix № 3
To the decree of Cabinet Ministry
June 21, 2003 N 320

List and limited number of employees of Irrigation Basin System authority

№	Name	Location of place	Limited number of workers of Administration body
I.	I. Main Canal System Authority for Fergana valley with unified dispatch center	Fergana City	18
1	Big Fergana main canal authority	Fergana City	16
2	Big Andijan main canal authority	Balikchi rayon	12
3	South Fergana main canal authority	Kuva rayon	14
	Total		60
II.	II. NarinI-Kkaradarya basin irrigation system authority	Andijan City	25
1	“Karadarya-Maylisoy” Irrigation System Authority	Izbaskan rayon	12
2	“Ulugnor-Mazgil” Irrigation system authority	Boz rayon	19
3	“Andijonsay” Irrigation system authority	Andijan rayon	14
4	“Shahrihonsoy” Irrigation system authority	Asaka City	15
5	“Savay-Akbura” Irrigation system authority	Hodjaabad rayon	12
	Total		97
III.	III. Narin – Sirdarya Basin irrigation system authority	Namangan City	25
1	Big Namangan main canal authority	Namangan City	10
2	North Fergana main canal authority	Namangan City	12
3	Narin Hakkulabad irrigation system authority	Urgench rayon	12
4	“Narin-Namangan” Irrigation system authority	Namangan rayon	15
5	“Padshaata-Chadak” Irrigation system authority	Kasansay rayon	25
6	“Ahunboboyev” Irrigation system authority	Mingbulak rayon	18
	Total		117
IV.	IV. Sirdarya-Soh Basin Irrigation System Authority	Fergana City	28
1	“Narin-Fergana” Irrigation system authority	Bagdad rayon	24
2	“Isfayram-Shahimardan” Irrigation system authority	Fergana City	22
3	“Soh-Aktepa” Irrigation System Authority	Qoqand City	18

4	“Isfara-Surdarya” Irrigation System Authority	Furkat rayon	22
	Total		114
V.	V. Chirchik-Ahangaran Basin Irrigation System Authority		30
1	Tashkent main canal authority	Tashkent City Bektemir rayon	12
2	“Bozsu” Irrigation System Authority	Tashkent City	22
3	“Parkent-Karasu” Irrigation System Authority	Tashkent City Bektemir rayon	36
4	“Ahangaran-Dalverzin” Irrigation System Authority	Pskent rayon	32
5	Tashkent city water management authority	Tashkent City	7
	Total		139
VI.	VI. Lower Sirdarya Basin Irrigation System Authority	Sh Rashidov rayon	36
1	South-Mirzachul main canal authority	Pahtakor City	18
2	“Shurozak” Irrigation System Authority	Sayhunobad rayon	26
3	“Boyovut – Arnasoy” Irrigation System Authority	Mirzachul rayon	40
4	“Uchtom” Irrigation System Authority	Dustlik rayon	12
5	“Khavos Zomin” Irrigation System Authority	Zarbdor rayon	30
	Total		162
VII.	VII. Zarafshan Basin Irrigation System Authority	Samarkand City	38
1	“Zarafshan” Irrigation System Authority	Samarkand City	25
2	“Tuyatotar-Kli” Irrigation System Authority	Bahmal rayon	12
3	“Mirzapay” Irrigation System Authority	Chelek City	22
4	“Dargom” Irrigation System Authority	Taylyak rayon	25
5	“Eski Angor” Irrigation System Authority	Chirakchin rayon	21
6	“Oq-Koradarya” Irrigation System Authority	Akdarin rayon	17
7	“Miankal –Tos” Irrigation System Authority	Kattakurgan rayon	12
8	“Karmana – Konimeh” Irrigation System Authority	Karmana City	12
9	“Narpay-Navoiy” Irrigation System Authority	Narpay rayon	17
	Total		201
VIII.	VIII. Amu-Surkhon Basin Irrigation System Authority	Termiz City	26
1	“Surkhondarya” main canal authority	Kumkurgan rayon	20
2	“Tupalang-Koratog” Irrigation System Authority	Denau City	27
3	“Surkhon – Sherabod” Irrigation System Authority	Sherabad rayon	22

4	“Amu – Zang” Irrigation System Authority	Jarkurgan rayon	27
	Total		112
IX.	IX. Amu-Kashkadarya Basin Irrigation System Authority	Karshi City	30
1	“Kashkadarya” Main Canal Authority	Kamashin rayon	18
2	“Mirishkor” Irrigation System Authority	Mirishkor rayon	25
3	“Karshi” Main Canal Authority	Karshi rayon	40
4	“ Oq Suv” Irrigation System Authority	Shahrisabz City	21
5	“Yakkabog - Guzar” Irrigation System Authority	Guzar rayon	15
	Total		149
X.	X. Amu-Bukhara Basin Irrigation System Authority	Buhara City	27
1	“Amu-Korakul” Irrigation System Authority	Alat City	19
2	“Shokhrud – Dostlik” Irrigation System Authority	Kagan City	16
3	“Kharhur – Duoba” Irrigation System Authority	Vobkent City	17
4	“Toshrabot –Jilavon” Irrigation System Authority	Gijduvan rayon	14
5	“Toshrabot – Ortachol” Irrigation System Authority	Kiziltep rayon	12
	Total		105
XI.	XI. Lower Amudarya Basin Irrigation system Authority	Takhiatash City	40
1	“Toshsoka” Irrigation System Authority	Bogot rayon	16
2	“Polvon - Gozovot” Irrigation System Authority	Khonka rayon	15
3	“Shovot – Kulavat” Irrigation System Authority	Urgench rayon	25
4	“Karamazi – Kilichbay” Irrigation System Authority	Gurlan rayon	12
5	“Mangit - Nazarkhon” Irrigation System Authority	Amudarya rayon	12
6	“Suenli” Irrigation System Authority	Konlikul rayon	34
7	“Pahtaarna – Nayman” Irrigation System Authority	Chimboy rayon	23
8	“Kuvanishjarma” Irrigation System Authority	Koraozak rayon	15
9	“Kattagar – Bozatov” Irrigation System Authority	Chimboy rayon	19
10	“Kattagar – Bozatov” Irrigation System Authority	Nukus rayon	12
11	Aral Sea basin delta authority	Nukus city	6
	Total		229
	Total for Uzbekistan		1495

References

Allan, J.A. (2006): 'IWRM: the new sanctioned discourse?' In: Peter P. Mollinga, Ajaya Dixit and Kusum Athukorala (eds.) IWRM in South Asia: Global Theory, Emerging Practice and Local Needs. Water in South Asia Series 1. Sage, New Delhi, pp.38-63.

Archer, Margaret (1995): Realist Social Theory: The Morphogenetic Approach Cambridge University Press, Cambridge.

Bijker, Wiebe E. (2002): 'The Oosterschelde Storm Surge Barrier. A Test Case for Dutch Water Technology, Management, and Politics'. Technology and Culture Vol.43, July, pp.569-584.

Bolding, A., P.P. Mollinga and K. van Straaten (1995): Modules for Modernisation: Colonial Irrigation in India and the Technological Dimension of Agrarian Change, Journal of Development Studies, Vol. 31, No. 6, pp. 805-844.

Bottrall, Anthony (1992): "Fits and misfits over time and space: technologies and institutions of water development for South Asian agriculture". Contemporary South Asia, Vol. 1, No. 2, pp. 227-247.

Bressers, Hans Th.A. and Stefan M.M. Kuks (2005). Integrated Regimes on Sustainable Use of Natural Resources: A Multiple Case Study Analysis. Paper for the Conference on "Sustainable Water Management: Comparing Perspectives from Australia, Europe and the United States", National Europe Centre, The Australian National University, Canberra, Australia, 15-16 September 2005.

Bruin, Erwin F.L.M. de , Frank G.W. Jaspers and Joyeeta Gupta (2006): 'The EU Water Framework Directive: Challenges for institutional implementation'. In: J. Vermaat, L. Bouwer, K. Turner and W. Salomons (eds.) Managing European Coasts. Past, Present and Future. Springer, Berlin, pp. 153-171.

Datye, K.R. (1997) (assisted by Suhas Paranjape and K.J. Joy): Banking on biomass. A new strategy for sustainable prosperity based on renewable energy and dispersed industrialisation. Environment and Development Series. Centre for Environment Education, Ahmedabad.

Dhawan, B.D. (1988): Irrigation in India's Agricultural Development, Productivity, Stability, Equity, Sage, New Delhi.

Disco, Cornelis (2002): 'Remaking "Nature": The Ecological Turn in Dutch Water Management'. Science, Technology and Human Values. Vol.27, No.2, pp.206-235.

Espeland, W.N. (1998): The Struggle or Water, Politics, Rationality, and Identity in the American Southwest, University of Chicago Press, Chicago.

Falk Moore, Sally (1973): 'Law and Social Change: The Semi-Autonomous Social Field as an Appropriate Subject of Study' Law & Society Review, Vol. 7, No. 4, pp. 719-746.

Faures, Jean-Marc, Mark Svendsen and Hugh Turral 'Reinventing Irrigation', Chapter 9 of David Molden (ed.) Water for Food, Water for Life. Earthscan, 2007 (in press).

Ferguson, James (1994): The Anti-Politics Machine. "Development", Depoliticization, and Bureaucratic Power in Lesotho. University of Minnesota Press, Minneapolis and London.

GOAP (Government of Andhra Pradesh) (1982): Report of the commission for irrigation utilisation. Volume I. Volume II. Hyderabad.

GOI/MOIP (Government of India/Ministry of Irrigation and Power) (1972): Report of the Irrigation Commission. Volume I. New Delhi.

GOI/PC/PEO (Government of India/Planning Commission/Programme Evaluation Organisation) (1965): Evaluation of major irrigation projects - some case studies.

Grindle, Merilee S. (1977): Bureaucrats, politicians and peasants in Mexico. A case study in public policy. University of California Press, Berkeley.

Grindle, Merilee S. (1999): In Quest of the Political: The Political Economy of Development Policy Making. CID Working Paper No. 17. Center for International Development at Harvard University.

GWP (Global Water Partnership) (2000): Integrated water resources management. GWP Technical Committee Background Paper 4. Stockholm: GWP.

Harriss, John (2001): Depoliticizing Development : The World Bank and Social Capital. New Delhi, Leftword.

Hill, Michael (1997): The Policy Process. A Reader. (second edition) Pearson Prentice Hall, London.

Hoebink, Paul (2006): 'European Donors and 'Good Governance': Conditions or Goal?' European Journal of Development Research 18 (1): 131-161.

Jaspers, F. G. W. (2003): 'Institutional arrangements for integrated river basin management.' Water Policy, 5, pp.77-90.

Jenkins, Rob (2001): 'Mistaking "Governance" for "Politics": Foreign Aid, Democracy and the Construction of Civil Society' In: Sudipta Kaviraj and Sunil Khilnani (eds.), Civil Society: History and Possibilities. Cambridge: Cambridge University Press, pp. 250-268.

Jenkins, Rob (2002): 'The Emergence of the Governance Agenda: Sovereignty, Neo-Liberal Bias and the Politics of International Development' In: Vandana Desai and Robert Potter (eds), The Companion to Development Studies New York: Oxford University Press, pp. 485-488.

Kaviraj, Sudipta (1997): 'The modern state in India'. In: Martin Doornbos and Sudipta Kaviraj (eds.) Dynamis of State Formation. India and Europe Compared. Indo-Dutch Studies on Development Alternatives 19. Sage, New Delhi, pp. 225-250.

Kerkvliet, Benedict J. Tria (1990): Everyday politics in the Philippines. Class and status relations in a Central Luzon village. University of California Press, Berkeley.

Kitching, Gavin (1988): Karl Marx and the Philosophy of Praxis. Routledge, London.

Kloezen, Wim H. (2002): Accounting for water. Institutional viability and impacts of market-oriented irrigation interventions in Central Mexico. Wageningen University (Ph.D. thesis).

Kuks, Stefan M.M. (2005): The Evolution of National Water Regimes in Europe. Transitions in Water Rights and Water Policies. Paper for the Conference on "Sustainable Water Management: Comparing Perspectives from Australia, Europe and the United States" 15-16 September 2005 at The National Museum of Australia, Canberra, Australia. Hosted by the National Europe Centre at The Australian National University, Canberra, Australia.

Lasswell, Harold D. (1936): Politics: Who Gets What, When, How McGraw-Hill, New York.

Leftwich, Adrian (ed.) (1984): What is Politics? The Activity and its Study. Basil Blackwell, Oxford.

Lintsen, Harry (2002): 'Two Centuries of Central water Management in the Netherlands.' Technology and Culture. Vol.43, No.3, pp. 549-568.

Long, Norman & J.D. van der Ploeg (1989): 'Demythologizing Planned Intervention: An Actor Perspective'. Sociologia Ruralis 29 (3/4): pp. 226-249.

Löwy, Ilana (1992): 'The Strength of Loose Concepts – Boundary Concepts, Federative Experimental Strategies and Disciplinary Growth: The Case of Immunology.' History of Science 30, 4, 90: 371 –396.

Lukes, Steven (2005): Power: A Radical View, Second Edition. Palgrave Macmillan.

Mackintosh, Maureen (1992): 'Introduction', In: Marc Wuyts, Maureen Mackintosh and Tom Hewitt (eds.) Development Policy and Public Action. Oxford University Press, Oxford in association with the Open University, Milton Keynes, pp. 1-9.

Massey, Doreen (1999): Philosophy and Politics of Spatiality: Some Considerations. In: Power-Geometries and the Politics of Space-Time. Heidelberg: Department of Geography, University of Heidelberg, pp. 27-42.

Menkhoff, Thomas and Hans-Dieter Evers (2005): Strategic Groups in a Knowledge Society: Knowledge Elites as Drivers of Biotechnology Development in Singapore. ZEF Department of Political and Cultural Change Working Paper Series 7.

Merrey, Douglas, Ruth Meinzen-Dick, P.P. Mollinga and Eiman Karar (2006): 'Policy and Institutional Reform Processes for Sustainable Agricultural Water Management: The Art of the Possible' Chapter 5 In: Water for Food, Water for Life. The Comprehensive Assessment of Water Management in Agriculture Synthesis Report (in press).

Mollinga, P.P. (2003): On the waterfront. Water distribution, technology and agrarian change on a South Indian canal irrigation system. Wageningen University Water Resources Series. Hyderabad, India: Orient Longman (orig. 1998).

Mollinga, P.P. and Alex Bolding (eds.) (2004): The politics of irrigation reform. Contested policy formulation and implementation in Asia, Africa and Latin America. Global Environmental Governance series. Ashgate.

Mollinga, P.P., Ajaya Dixit and Kusum Athukorala (eds.) (2006): Integrated Water Resources Management. Global Theory, Emerging Practice and Local Needs. Water in South Asia series 1. Sage, New Delhi.

Mooij, Jos and Veronica de Vos (2003): Policy Processes: An Annotated Bibliography on Policy Prosees, with Particular Emphasis on India. Working Paper 221. Overseas Development Institute, London.

Nadkarni, M.V. (1984): 'Irrigation and Rural Development – A Sceptical View', Economic and Political Weekly, Review of Agriculture, Vol. 19, No.26, pp. A67 - A73.

Nikku, Bala Raju (2006): The Politics of Policy. Participatory Irirgation Management in Andhra Pradesh. Wageningen University (Ph.D. thesis).

Ohlsson, L. (1995): Hydropolitics: conflicts over water as a development constraint. Zed Books, London.

Ostrom, Elinor (1990): Governing the commons. The evolution of institutions for collective action. Cambridge University Press, New York.

Pahl-Wostl, Claudia (2002): 'Towards Sustainability in the Water Sector – The Importance of Human Actors and Processes of Social Learning'. Aquatic Sciences 64: 394-411.

Paranjape, Suhas and K.J. Joy (1995): Sustainable technology. Making the Sardar Sarovar project viable. A comprehensive proposal to modify the project for greater equity and ecological sustainability. Environment and Development Series. Centre for Environment Education, Ahmedabad.

Rap, Edwin (2004): The Success of a Policy Model. Irrigation Management Transfer in Mexico. Wageningen University (Ph.D. thesis).

Repetto, R. (1986): Skimming the Water: Rent Seeking and the Performance of Public Irrigation Systems. World Resources Institute, Washington DC, United States.

Rogers, P. and Alan. W. Hall (2003): Effective Water Governance. TEC Background Papers No. 7. GWP, Stockholm (http://www.gwpforum.org/servlet/PSP?iNodeID=215&itemID=197).

Rosegrant, M. W. and M. Svendsen (1993): 'Asian food production in the 1990s: irrigation investment and management policy.' Food Policy. 18: 1, pp. 13-32.

Sabatier, Paul A. (1988): 'Am Advocacy Coalition Framework of Policy Change and the Role of Policy-Oriented Learning Therein'. Policy Sciences, Vol.21, No.2-3, pp. 129-168.

Scoones, Ian and John Thompson (eds.) (1994): Beyond Farmer First. IT Publications, London.

Scott, James C. (1997): Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed. Yale University Press.

Sengupta, Nirmal (1985): "Irrigation: traditional vs. modern". Economic and Political Weekly, Vol. 20, No. 45, 46 & 47, pp. 1919-38.

Shah, Tushaar, Ian Makin and R. Sakthivadivel (2006): 'Limits to Leapfrogging: Issues in Transposing Successful River Basin Management Institutions in the Developing World'. In: P.P. Mollinga, Ajaya Dixit and Kusum Athukorala (eds.), IWRM in South Asia: Global Theory, Emerging Practice and Local Needs.Water in South Asia Series 1. Sage, New Delhi, pp. 109-144.

Star, S.L. & J.R. Griesemer (1989): 'Institutional Ecology, 'Translations' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39' Social Studies of Science, 19: 387-420.

Turton, Anthony and Ronald Henwood (eds.) (2002): Hydropolitics in the Developing World. A Southern African Perspective. AWIRA, University of Pretoria; URL: www.internationalwaterlaw.org/Articles/hydropolitics_book.pdf.

VanderVelde, Edwin and Jamshed Tirmizi (2004): 'Irrigation Policy Reforms in Pakistan: Who's Getting the Process Right?' In: Peter P. Mollinga and Alex Bolding (eds.) The Politics of Irrigation Reform. Contested Policy Formulation and Implementation in Asia, Africa and Latin America. Global Environmental Governance series. Ashgate, Aldershot. Pp. 207-239.

Viessman, W. (1998): 'Water policies for the future: an introduction' Water Resources Update. Universities Council on Water Resources. Issue No. 111, pp. 4-7.

Wade, R. (1982): 'The System of Administrative and Political Corruption: Canal Irrigation in South India', Journal of Development Studies, Vol. 18, No. 3, pp. 287-328.

Wade, R. and R. Chambers (1980): 'Managing the Main System: Canal Irrigation's Blind Spot', Economic and Political Weekly, Vol. 15, No. 39, pp. A107-112.

Waterbury, J. (1979): Hydropolitics of the Nile valley. Syracuse University Press, New York.

Yalcin, Resul and Peter P. Mollinga (2007): Institutional Transformation in Uzbekistan's Agricultural and Water Resources Administration: The creation of a new bureaucracy. ZEF Working Paper (in press).

Zeitoun, Mark and Jeroen Warner (2006): 'Hydro-hegemony – a framework for analysis of trans-boundary water conflicts'. Water Policy Vol 8 No 5 pp. 435–460.

ISSN 0020-9449

Internationales Asienforum

International Quarterly for Asian Studies

39. Jahrgang, Mai 2008 **1-2/08**

ARNOLD BERGSTRAESSER INSTITUT

The IAF, one of Germany's leading refereed journals of Asian Studies, has been published since 1978. The journal appears twice a year with about 400 pages p.a.

For a subscription e-mail to:
Clemens Jürgenmeyer
abifr@abi.uni-freiburg.de

ZEF Working Paper Series, ISSN 1864-6638
Department of Political and Cultural Change
Center for Development Research, University of Bonn
Editors: H.-D. Evers, Solvay Gerke, Conrad Schetter

1 Evers, Hans-Dieter and Solvay Gerke (2005). Closing the Digital Divide: Southeast Asia's Path Towards a Knowledge Society.
2 Bhuiyan, Shajahan and Hans-Dieter Evers (2005). Social Capital and Sustainable Development: Theories and Concepts.
3 Schetter, Conrad (2005). Ethnicity and the Political Reconstruction of Afghanistan.
4 Kassahun, Samson (2005). Social Capital and Community Efficacy. In Poor Localities of Addis Ababa Ethiopia.
5 Fuest, Veronika (2005). Policies, Practices and Outcomes of Demand-oriented Community Water Supply in Ghana: The National Community Water and Sanitation Programme 1994 – 2004.
6 Menkhoff, Thomas and Hans-Dieter Evers (2005). Strategic Groups in a Knowledge Society: Knowledge Elites as Drivers of Biotechnology Development in Singapore.
7 Mollinga, Peter P. (2005). The Water Resources Policy Process in India: Centralisation, Polarisation and New Demands on Governance.
8 Evers, Hans-Dieter (2005). Wissen ist Macht: Experten als Strategische Gruppe.
8a Evers, Hans-Dieter and Solvay Gerke (2005). Knowledge is Power: Experts as Strategic Group.
9 Fuest, Veronika (2005). Partnerschaft, Patronage oder Paternalismus? Eine empirische Analyse der Praxis universitärer Forschungskooperation mit Entwicklungsländern.
10 Laube, Wolfram (2005). Promise and Perils of Water Reform: Perspectives from Northern Ghana.
11 Mollinga, Peter P. (2004). Sleeping with the Enemy: Dichotomies and Polarisation in Indian Policy Debates on the Environmental and Social Effects of Irrigation.
12 Wall, Caleb (2006). Knowledge for Development: Local and External Knowledge in Development Research.
13 Laube, Wolfram and Eva Youkhana (2006). Cultural, Socio-Economic and Political Con-straints for Virtual Water Trade: Perspectives from the Volta Basin, West Africa.
14 Hornidge, Anna-Katharina (2006). Singapore: The Knowledge-Hub in the Straits of Malacca.
15 Evers, Hans-Dieter and Caleb Wall (2006). Knowledge Loss: Managing Local Knowledge in Rural Uzbekistan.
16 Youkhana, Eva, Lautze, J. and B. Barry (2006). Changing Interfaces in Volta Basin Water Management: Customary, National and Transboundary.
17 Evers, Hans-Dieter and Solvay Gerke (2006). The Strategic Importance of the Straits of Malacca for World Trade and Regional Development.
18 Hornidge, Anna-Katharina (2006). Defining Knowledge in Germany and Singapore: Do the Country-Specific Definitions of Knowledge Converge?
19 Mollinga, Peter M. (2007). Water Policy – Water Politics: Social Engineering and Strategic Action in Water Sector Reform.
20 Evers, Hans-Dieter and Anna-Katharina Hornidge (2007). Knowledge Hubs Along the Straits of Malacca.
21 Sultana, Nayeem (2007). Trans-National Identities, Modes of Networking and Integration in a Multi-Cultural Society. A Study of Migrant Bangladeshis in Peninsular Malaysia.
22 Yalcin, Resul and Peter M. Mollinga (2007). Institutional Transformation in Uzbekistan's Agricultural and Water Resources Administration: The Creation of a New Bureaucracy.
23 Menkhoff, T., Loh, P. H. M., Chua, S. B., Evers, H.-D. and Chay Yue Wah (2007). Riau Vegetables for Singapore Consumers: A Collaborative Knowledge-Transfer Project Across the Straits of Malacca.
24 Evers, Hans-Dieter and Solvay Gerke (2007). Social and Cultural Dimensions of Market Expansion.
25 Obeng, G. Y., Evers, H.-D., Akuffo, F. O., Braimah, I. and A. Brew-Hammond (2007). Solar PV Rural Electrification and Energy-Poverty Assessment in Ghana: A Principal Component Analysis.
26 Eguavoen, Irit; E. Youkhana (2008). Small Towns Face Big Challenge. The Management of Piped Systems after the Water Sector Reform in Ghana.
27 Evers, Hans-Dieter (2008). Knowledge Hubs and Knowledge Clusters: Designing a Knowledge Architecture for Development
28 Ampomah, Ben Y., Adjei, B. and E. Youkhana (2008). The Transboundary Water Resources Management Regime of the Volta Basin.
29 Saravanan.V.S.; McDonald, Geoffrey T. and Peter P. Mollinga (2008). Critical Review of Integrated Water Resources Management: Moving Beyond Polarised Discourse.
30 Laube, Wolfram; Awo, Martha and Benjamin Schraven (2008). Erratic Rains and Erratic Markets: Environmental change, economic globalisation and the expansion of shallow groundwater irrigation in West Africa.
31 Mollinga, Peter P. (2008). For a Political Sociology of Water Resources Management.
32 Hauck, Jennifer; Youkhana, Eva (2008). Histories of water and fisheries management in Northern Ghana.
33 Mollinga, Peter P. (2008). The Rational Organisation of Dissent. Boundary concepts, boundary objects and boundary settings in the interdisciplinary study of natural resources management.
34 Evers, Hans-Dieter; Gerke, Solvay (2009). Strategic Group Analysis.
35 Evers, Hans-Dieter; Benedikter, Simon (2009). Strategic Group Formation in the Mekong Delta - The Development of a Modern Hydraulic Society.
36 Obeng, George Yaw; Evers, Hans-Dieter (2009). Solar PV Rural Electrification and Energy-Poverty: A Review and Conceptual Framework With Reference to Ghana.
37 Scholtes, Fabian (2009). Analysing and explaining power in a capability perspective.
38 Eguavoen, Irit (2009). The Acquisition of Water Storage Facilities in the Abay River Basin, Ethiopia.
39 Hornidge, Anna-Katharina; Mehmood Ul Hassan; Mollinga, Peter P. (2009). 'Follow the Innovation' – A joint experimentation and learning approach to transdisciplinary innovation research.
40 Scholtes, Fabian (2009). How does moral knowledge matter in development practice, and how can it be researched?
41 Laube, Wolfram (2009). Creative Bureaucracy: Balancing power in irrigation administration in northern Ghana.
42 Laube, Wolfram (2009). Changing the Course of History? Implementing water reforms in Ghana and South Africa.

43 Scholtes, Fabian (2009). Status quo and prospects of smallholders in the Brazilian sugarcane and ethanol sector: Lessons for development and poverty reduction.
44 Evers, Hans-Dieter, Genschick, Sven, Schraven, Benjamin (2009). Constructing Epistemic Landscapes: Methods of GIS-Based Mapping.
45 Saravanan V.S. (2009). Integration of Policies in Framing Water Management Problem: Analysing Policy Processes using a Bayesian Network.
46 Saravanan V.S. (2009). Dancing to the Tune of Democracy: Agents Negotiating Power to Decentralise Water Management.
47 Huu, Pham Cong, Rhlers, Eckart, Saravanan, V. Subramanian (2009). Dyke System Planing: Theory and Practice in Can Tho City, Vietnam.
48 Evers, Hans-Dieter, Bauer, Tatjana (2009). Emerging Epistemic Landscapes: Knowledge Clusters in Ho Chi Minh City and the Mekong Delta.
49 Reis, Nadine; Mollinga, Peter P. (2009). Microcredit for Rural Water Supply and Sanitation in the Mekong Delta. Policy implementation between the needs for clean water and 'beautiful latrines'.
50 Gerke, Solvay; Ehlert, Judith (2009). Local Knowledge as Strategic Resource: Fishery in the Seasonal Floodplains of the Mekong Delta, Vietnam
51 Schraven, Benjamin; Eguavoen, Irit; Manske, Günther (2009). Doctoral degrees for capacity development: Results from a survey among African BiGS-DR alumni.
52 Nguyen, Loan (2010). Legal Framework of the Water Sector in Vietnam.
53 Nguyen, Loan (2010). Problems of Law Enforcement in Vietnam. The Case of Wastewater Management in Can Tho City.
54 Oberkircher, Lisa et al. (2010). Rethinking Water Management in Khorezm, Uzbekistan. Concepts and Recommendations.
55 Waibel, Gabi (2010). State Management in Transition: Understanding Water Resources Management in Vietnam.
56 Saravanan V.S., Mollinga, Peter P. (2010). Water Pollution and Human Health. Transdisciplinary Research on Risk Governance in a Complex Society.
57 Vormoor, Klaus (2010). Water Engineering, Agricultural Development and Socio-Economic Trends in the Mekong Delta, Vietnam.
58 Hornidge, Anna-Katharina, Kurfürst, Sandra (2010). Envisioning the Future, Conceptualising Public Space. Hanoi and Singapore Negotiating Spaces for Negotiation.
59 Mollinga, Peter P. (2010). Transdisciplinary Method for Water Pollution and Human Health Research.
60 Youkhana, Eva (2010). Gender and the development of handicraft production in rural Yucatán/Mexico.
61 Naz, Farhat, Saravanan V. Subramanian (2010). Water Management across Space and Time in India.
62 Evers, Hans-Dieter, Nordin, Ramli, Nienkemoer, Pamela (2010). Knowledge Cluster Formation in Peninsular Malaysia: The Emergence of an Epistemic Landscape.
63 Mehmood Ul Hassan, Hornidge, Anna-Katharina (2010). 'Follow the Innovation' – The second year of a joint experimentation and learning approach to transdisciplinary research in Uzbekistan.
64 Mollinga, Peter P. (2010). Boundary concepts for interdisciplinary analysis of irrigation water management in South Asia.
65 Noelle-Karimi, Christine (2006). Village Institutions in the Perception of National and International Actors in Afghanistan.
(Amu Darya Project Working Paper No. 1)
66 Kuzmits, Bernd (2006). Cross-bordering Water Management in Central Asia.
(Amu Darya Project Working Paper No. 2)
67 Schetter, Conrad, Glassner, Rainer, Karokhail, Masood (2006). Understanding Local Violence. Security Arrangements in Kandahar, Kunduz and Paktia.
(Amu Darya Project Working Paper No. 3)
68 Shah, Usman (2007). Livelihoods in the Asqalan and Sufi-Qarayateem Canal Irrigation Systems in the Kunduz River Basin.
(Amu Darya Project Working Paper No. 4)
69 ter Steege, Bernie (2007). Infrastructure and Water Distribution in the Asqalan and Sufi-Qarayateem Canal Irrigation Systems in the Kunduz River Basin.
(Amu Darya Project Working Paper No. 5)
70 Mielke, Katja (2007). On The Concept of 'Village' in Northeastern Afghanistan. Explorations from Kunduz Province.
(Amu Darya Project Working Paper No. 6)
71 Mielke, Katja, Glassner, Rainer, Schetter, Conrad, Yarash, Nasratullah (2007). Local Governance in Warsaj and Farkhar Districts.
(Amu Darya Project Working Paper No. 7)
72 Meininghaus, Esther (2007). Legal Pluralism in Afghanistan.
(Amu Darya Project Working Paper No. 8)
73 Yarash, Nasratullah, Smith, Paul, Mielke, Katja (2010). The fuel economy of mountain villages in Ishkamish and Burka (Northeast Afghanistan). Rural subsistence and urban marketing patterns.
(Amu Darya Project Working Paper No. 9)
74 Oberkircher, Lisa (2011). 'Stay – We Will Serve You Plov!'. Puzzles and pitfalls of water research in rural Uzbekistan.
75 Shtaltovna, Anastasiya, Hornidge, Anna-Katharina, Mollinga, Peter P. (2011). The Reinvention of Agricultural Service Organisations in Uzbekistan – a Machine-Tractor Park in the Khorezm Region.
76 Stellmacher, Till, Grote, Ulrike (2011). Forest Coffee Certification in Ethiopia: Economic Boon or Ecological Bane?

ZEF Development Studies

edited by Solvay Gerke and Hans-Dieter Evers

Center for Development Research (ZEF), University of Bonn

Shahjahan H. Bhuiyan
Benefits of Social Capital. Urban Solid Waste Management in Bangladesh
Vol. 1, 2005, 288 p., 19.90 EUR, br. ISBN 3-8258-8382-5

Veronika Fuest
Demand-oriented Community Water Supply in Ghana. Policies, Practices and Outcomes
Vol. 2, 2006, 160 p., 19.90 EUR, br. ISBN 3-8258-9669-2

Anna-Katharina Hornidge
Knowledge Society. Vision and Social Construction of Reality in Germany and Singapore
Vol. 3, 2007, 200 p., 19.90 EUR, br. ISBN 978-3-8258-0701-6

Wolfram Laube
Changing Natural Resource Regimes in Northern Ghana. Actors, Structures and Institutions
Vol. 4, 2007, 392 p., 34.90 EUR, br. ISBN 978-3-8258-0641-5

Lirong Liu
Wirtschaftliche Freiheit und Wachstum. Eine international vergleichende Studie
Vol. 5, 2007, 200 p., 19.90 EUR, br. ISBN 978-3-8258-0701-6

Phuc Xuan To
Forest Property in the Vietnamese Uplands. An Ethnography of Forest Relations in Three Dao Villages
Vol. 6, 2007, 296 p., 29.90 EUR, br. ISBN 978-3-8258-0773-3

Caleb R.L. Wall, Peter P. Mollinga (Eds.)
Fieldwork in Difficult Environments. Methodology as Boundary Work in Development Research
Vol. 7, 2008, 192 p., 19.90 EUR, br. ISBN 978-3-8258-1383-3

Solvay Gerke, Hans-Dieter Evers, Anna-K. Hornidge (Eds.)
The Straits of Malacca. Knowledge and Diversity
Vol. 8, 2008, 240 p., 29.90 EUR, br. ISBN 978-3-8258-1383-3

Caleb Wall
Argorods of Western Uzbekistan. Knowledge Control and Agriculture in Khorezm
Vol. 9, 2008, 384 p., 29.90 EUR, br. ISBN 978-3-8258-1426-7

Irit Eguavoen
The Political Ecology of Household Water in Northern Ghana
Vol. 10, 2008, 328 p., 34.90 EUR, br. ISBN 978-3-8258-1613-1

Charlotte van der Schaaf
Institutional Change and Irrigation Management in Burkina Faso. Flowing Structures and Concrete Struggles
Vol. 11, 2009, 344 p., 34.90 EUR, br. ISBN 978-3-8258-1624-7

Nayeem Sultana
The Bangladeshi Diaspora in Peninsular Malaysia. Organizational Structure, Survival Strategies and Networks
Vol. 12, 2009, 368 p., 34.90 EUR, br. ISBN 978-3-8258-1629-2

Peter P. Mollinga, Anjali Bhat, Saravanan V.S. (Eds.)
When Policy Meets Reality. Political Dynamics and the Practice of Integration in Water Resources Management Reform
Vol. 13, 216 p., 29.90 EUR, br., ISBN 978-3-643-10672-8

Irit Eguavoen, Wolfram Laube (Eds.)
Negotiating Local Governance. Natural Resources Management at the Interface of Communities and the State
Vol. 14, 248 p., 29.90 EUR, br., ISBN 978-3-643-10673-5

William Tsuma
Gold Mining in Ghana. Actors, Alliances and Power
Vol. 15, 2010, 256 p., 29.90 EUR, br., ISBN 978-3-643-10811-1

Thim Ly
Planning the Lower Mekong Basin: Social Intervention in the Se San River
Vol. 16, 2010, 240 p., 29.90 EUR, br., ISBN 978-3-643-10834-0