

Article

## Water Management in a State-Centered Environment: Water Governance Analysis of Uzbekistan

Munira Aminova <sup>1,\*</sup> and Iskandar Abdullayev <sup>2</sup>

<sup>1</sup> Faculty of Economics, Social and Political Sciences and the Solvay Business School, Vrije Universiteit Brussels, Pleinlaan 2, 1050 Brussels, Belgium

<sup>2</sup> Center for Development Research–ZEF, Department of Political and Cultural Change, Walter Flex Str. 3 Bonn, D-53113, Germany; E-Mail: i.abdullaev@uni-bonn.de

\* Author to whom correspondence should be addressed; E-Mail: munira.aminova@vub.ac.be; Tel.: +32-2-629-1420; Fax: +32-2-629-2060.

Received: 12 October 2009 / Accepted: 25 November 2009 / Published: 8 December 2009

---

**Abstract:** In the early 1990s the countries of Central Asia started their transformation to a market economy. Uzbekistan is in the throes of change and facing a huge restructuring task and a need to improve governance. Decades of central bureaucratic allocation of natural resources left national bureaucrats with little capacity to formulate their own sustainable policies. Lack of inclusive, long term oriented policies and mechanisms in management of common pool resources brought catastrophic results in the past. The study reveals that implanting a top-down quota policy has positive effects on a larger public. However it may become a threat to the long term environmental sustainability.

**Keywords:** water management; governance; stakeholder analysis; Central Asia; Uzbekistan

---

### 1. Introduction

#### 1.1. Governance

Increasingly “nirvana” concepts such as integrated water resources, water governance [1] are penetrating into developing countries, creating a space for existence within the public domain. Supported and funded by International Funding Institutions (IFI) as part of Washington consensus [2]

concepts such as good governance has become one of the most promoted ideas due to the increasing importance of all strata of society in matters which were so far function of a state.

Kaufman *et al.* [3] define *governance* as traditions and institutions that determine how authority is exercised in a particular country. This includes (1) the process by which governments are selected, held accountable, monitored, and replaced; (2) the capacity of governments to manage resources efficiently and formulate, implement, and enforce sound policies and regulations; and (3) the respect of citizens and the state for the institutions that govern economic and social interactions among them. *Good governance* refers to a strong and effective state that is accountable to its people, governed by a constitutional rule of law and able to provide a stable political environment [4]. Good governance is responsive, participatory, transparent, equitable, accountable, consensus oriented, effective and efficient and directed toward strategic vision [5].

Central Asian countries rank the lowest quintile on governance indicators among all countries of the world covered by the study of the World Bank [3]. One of the reasons is of course is the dramatic if not revolutionary transition of those countries in the early 1990s from planned to market based economy which affected the very foundations of their political, social and economic lives. Transition had deep implications on all branches of public life including on the natural resources management (NRM) policies of the Central Asian countries. The reform agenda was ambitious however; the development of public administration was far behind the economic reforms initiated. Low administrative capability gave rise to enormous economic and social costs. The old rules were outdated. New ones have not yet been drafted. Uzbekistan for instance, was trying to change incrementally. It was however ‘...deeply concerned with maintaining the capacity to govern in the face of great change’ [6].

In the midst of reforms the government of Uzbekistan and many other transitional countries has realized the absence of frameworks, mechanisms, government personnel and resources to make the change happen. ‘It became evident that the old regulatory framework and obsolete administrative structures were not capable of resolving the urgent and complicated problems of transition to a new political and economic reality’ [7] since the government was still run by the same old ‘nomenklatura’ which was there before the transition. Situation is further complicated since 70 years of central planning made local civil servants ‘handicap’ in terms of policy making. The policies were formulated in Moscow and National Republics were to implement them only. So the capacity of individual republics to formulate strategy was limited due to historical reasons.

Uzbekistan for centuries has been characterised by traditions of hierarchy and authoritarianism among its settled population of the river valleys and oases. ‘Authority is personalised and personal loyalties are deeply rooted’ [8]. Even after 19 years of independence organisational structures are still hierarchical, this reinforces the command and control culture. One of the explanations given by scholars is that the hierarchy and authoritarian leadership style fits the nature of an irrigated oasis society, so participative decision making and inclusion of stakeholders into the process of policy formulation seems against the local ideology.

Local ideology or local culture which is a ‘unique hybrid of national and Muslim symbolism’ nurtured throughout centuries due to country’s privileged position at the crossroads of the ancient trading routes. It is questionable which cultural grouping to fit Uzbekistan into—how ‘Asian’ is a country that for about a century was ruled from Moscow, only becoming independent in 1991.

Likewise, while the country's population is predominantly Muslim, again the experience of being largely isolated from the larger Muslim world when part of the Soviet Union means that the impact of religious affiliation differs from that in other parts of the Muslim world [9]. Religious rituals or so called 'community practices' got modified to suit the needs of society. In three generation Uzbek family living in the same household deaths, marriages, child births and others are still celebrated with the direct participation of community members where unwritten rules are unquestionably followed by the members of society and authority and hierarchy of 'respected' people are subordinated. So the transferability of the western concepts of governance into the countries which are so deeply rooted in tradition and shaped by soviet system like Central Asian countries is a case in question. Thus it has far reaching impact on water governance issues too.

### *1.2. Water Governance*

Good governance contributes to sustainable water management. The concept of governance applies to the water sector [10,11]. Water governance described by Rogers and Hall [12], as 'the range of political, social, economic and administrative systems that are in place to develop and manage water resources, and the delivery of water services, at different levels of society'. DFID describes water governance as 'encompassing all the mechanisms, processes, relationships and institutions through which citizens and groups articulate their interests and exercise their rights and obligations'. The representation of various interests in water decision making and the role of politics are important components in addressing governance dynamics [13]. So participation, transparency and accountability form the guiding principles needed for ensuring policies and decisions on water are responsive to citizens [14].

Water governance has become a centrepiece of high level political agenda of the last decade, e.g., in 2000, Hague Ministerial Declaration [15] called for 'governing water wisely to ensure good governance so that the involvement of the public and interests of all stakeholders are included in the management of water resources'. In Bonn Freshwater Conference [16], ministries have proposed that each country should take appropriate measures for ensuring good governance of water. United Nations Millennium Assembly [17] urged to stop unsustainable exploitation of water resources and to develop water management strategies for the regional, national and local levels on improving water governance. However, as Franks and Cleaver [18] state, although there is a growing recognition of the importance of water governance issues surprisingly there is a lack of theoretical analysis and debate over water governance. Extensive research has been carried out on developing of water governance analysis frameworks and their application for various countries; however, in case of former Soviet states the water governance analysis is rare or scattered in nature.

Water management during the Former Soviet Union (FSU) in Central Asia was a part of the overall state policy towards increasing agricultural production, specifically cotton production. The resources, e.g., water were part of the input system which was controlled by the government. The consumers, large farms utilized all resources provided by the state for growing cotton in the collective land with collective (ir-) responsibility. This has changed after the independence, the previously common water resources became contested at the higher—interstate level; land reforms have led to the formation of numerous individual farms instead of large collective farms. This has increased competition and

contestation for water at the lowest—grass root levels [19]. For the analysis of the impact of the transition on water governance authors have selected the state quota policy which is a major issue impacting water management since soviet times. Although state-quota policy normally faces variety of criticisms by researchers [20] serious and systematic academic research on this topic is lacking except for few recent attempts [21,22]. Existing literature on water governance research on Central Asia is scattered in nature and touch different parts of water governance, e.g., emerging and changing institutions, corruption, path dependency of new institutions, organizational changes in water sector.

This paper starts illustrating the changes which has been taking place within the government of transition countries and then follows on reflecting on the changes taking place in agriculture management of Uzbekistan. More specifically the paper focuses on the policy process within the agriculture management and its impacts to the local population. It then makes in-depth analysis of state quota policy and its implication to the general water management situation in Uzbekistan and on various stakeholders. The authors believe that this initial research which combines institutional appraisal and social analysis brings out many issues which can not be studied solely and integrated research approach is required to see the interrelatedness of the conflicting opinions around one issue. Applying inter-disciplinary approach and illustrating the need for this we believe that more research will follow.

## 2. Overview

### *State Quota*

Uzbekistan is the most populous country of Central Asia accounting for more than 45% of the population of the region. Agriculture is the backbone of Uzbekistan's economy, contributing almost to one-third to the annual GDP, 40% of total employment and 60% of foreign exchange earnings. It is also a great consumer of the natural resources, and it accounts for 92% of Uzbekistan's 56 billion cubic meters (BCM) total water use [23], equivalent to 60% of all water use in Central Asia [22].

Cotton was grown in Uzbekistan for centuries due to the favourable environmental conditions. Although cotton was a dominant product of Uzbek agriculture for a long time starting from 1950s its production grew dramatically when Uzbekistan was proclaimed as a centre of nation's cotton production. Soviet planners extended irrigation and supported the growth of the cotton by critical inputs like machinery, fertilisers and most importantly water. Cotton was then bartered with other republics in exchange for foodstuffs and other products. The production of inputs and outputs was strictly controlled; there was a quota on output and area, state purchase system and price, quantity of production and others; in 1991 the government still kept control of all production but the intention was to liberalise step-by-step as it was a policy for all sectors of economy.

After the independence and the collapse of centralised system which brought massive disruption and hardship to the lives of millions, it was decided to reconsider national food security and achieve grain (wheat) independence, since importing 3–4 million tons of wheat was a threat to national food security [20]. Large portion of land was allocated for growing wheat and by 1994 the wheat independence was achieved, this decreased the area for cotton growth to 30%–35%. Now cotton and wheat are two main agricultural products of Uzbekistan. Initially, the Uzbek government had quotas

for almost all agricultural products. Since 1995, the quota system has been used only to cotton and wheat. Cotton production is controlled through quotas on area and output; similarly prices of inputs (such as fertilizers, diesel, *etc.*), outputs (such as cotton and wheat) and marketing (which are done by state companies to find appropriate markets for the sale of the outputs) are controlled too. In return farmers must sell 100% (only for cotton) of the output to the government for a fixed price. The quota system for wheat production is somewhat more flexible than that for cotton. Farmers are allowed to sell 50% of their quota in the market or to keep it for family consumption. The land to be sown with wheat is also strictly controlled and the same rules are applied as for cotton [24].

State quota for cotton and wheat means that the state through its semi-state organizations signs an agreement with individual farmers for delivering pre-determined amounts of wheat and cotton. On the basis of state quota farmers receive all necessary inputs to produce cotton or wheat. The farmers who are assigned by local governments (*hakimyat*) to grow cotton and wheat should follow strict rules of growing cotton-wheat, specifically: (1) agrotechnical rules (when to do sowing, irrigation, fertilization, and other.); (2) land use rules (where and how many hectares of which crop should be sown); (3) and administrative (attending daily meetings, obeying to state authorities, *etc.*). The plan for state quota is determined by local government (*hakimyat*) using land quality (bonitet) grades for each farmland). The state quota for cotton and wheat has the following important implications for water management: (i) water is seen as one of the inputs into the cotton and wheat quota production; therefore water management institutions (organizations, water rights, legal documents) are influenced by this fact, (ii) state quota allows administrative interferences into daily water management since it is a part of overall agriculture management [11]. The state quota shapes water governance process (because planning, distribution and control are done through state water management organizations) and since it is a part of the overall state policy, it pre-determines the water governance for irrigated agriculture.

The most malignant aspect of the cotton quota system is the allocation of specific areas for growing cotton, irrespective of their current appropriateness. Additionally even if farmers fulfill their cotton production quota, they still can not grow anything else in the area allocated for growing cotton. This gives farmers little incentive to increase land productivity and output since growing cotton is a lengthy and labor intensive process and if the right incentives does not exist there is a little hope that the efficiency of land will be increased.

### 3. Research Framework and Methodology

#### 3.1. Water Governance Analysis

Dukhovniy *et al.* 2008 suggested 6 principle indicators to assess different water governance hierarchies in Central Asia [24]. The indicators are designed for the different water management hierarchical levels: (1) for transboundary level—is a minimum of unproductive losses; (2) for a national level—the contribution of water sector to GNP; (3) for sub basin level—the aggregated basin productivity, and so on. Although, the approach seems rather technical it reflects the important aspects of water governance which is missing in other methodologies.

Global Water Partnership's [12] water governance indicators are: openness and transparency, inclusiveness and communication, coherence and integration, equity and ethics, accountability,

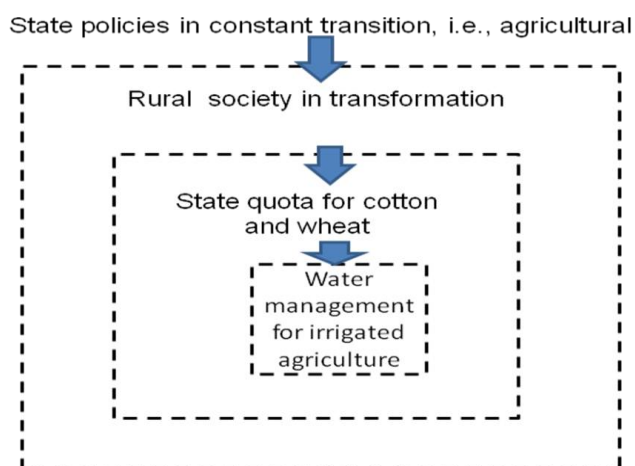
efficiency, responsiveness and sustainability. The centrepiece of governance analysis of GWP lies within IWRM principles, through which existing water governance deficiencies should be improved. However, application of the GWP approach is mainly limited to descriptive analysis of water sector.

According to the UNDP Water governance classification [11], the governance could be measured by analyzing following aspects of water governance: (i) equity, efficiency in water resources and services allocation, water administration based on catchments, the need for integrated water management approaches and the need to balance water use between socio-economic activities and ecosystems, (ii) clarification of the roles of government, civil society and the private sector and their responsibilities regarding ownership, management and administration of water resources and services, (iii) inter-sectoral dialogue and co-ordination, (iv) stakeholder participation and conflict resolution, (v) water rights and permits, (vi) the role of women in water management, (vii) water quantity and quality standards, (viii) bureaucratic obstacles and corruption, (ix) price regulation and subsidies and (x) tax incentives and credits. This approach although very comprehensive requires huge effort on collection of data on all those above aspects of water governance.

DFID's [24] formulated three indicators for good governance: state capability, accountability and responsiveness. The framework of DFID for governance analysis for CAR has been developed recently as an analytical tool to assess various dimensions of governance. The DFID CAR framework proposes the use of 12 indicators to assess governance. It fits well for the situations where state plays important role on provision of water services like Uzbekistan. However, extensive indicators makes application of the framework not only time consuming but results rather general.

Franks and Cleaver suggests looking into governance using four interlinked processes: resources for water governance, specific mechanisms of access, gendered outcomes for the poor and ecosystem outcomes. The framework of Franks and Cleaver is a useful tool to understand social dynamics of water governance. It helps to understand how different groups mobilize material and non material resources to produce variety of access mechanisms. It is also a useful tool for analysis of the impact of the different state policies on poor and ecosystems.

**Figure 1.** Water Management with wider context of transition.



Although there are comprehensive frameworks on water governance analysis, their application for the context of state-centric environments such as Uzbekistan is not an easy endeavor; water

governance analysis for Central Asia region should consider particularities of the region's countries. The Central Asian states have been in transformation from centralized, planned socialistic state into some form of market economy since late 1980's. This transformation has been assessed as gradual [25], as failure and state-centric [26]. The water management in different states although went through different changes and transformations still remains quasi—state owned or managed at all levels. There are also different dynamics of the process at the different hierarchical levels. The water management exists within socio-economic and political systems where continuous changes are taking place, such as agricultural policies and those changes have a direct influence on water management (Figure 1).

A pre-requisite for governance analysis is the existence of minimum set of democratic institutions in the country. Application of any framework without adaptation into the Uzbek situation may result in rather vague, descriptive outcomes. The analysis of water governance should reflect how specific policy is made (policy process); who the actors are and what are their agendas (stakeholders); what are their mechanisms and resources to get access to the water resources (Table 1).

**Table 1.** A framework for water governance: major elements [18].

| Major elements          |                    | Description   |
|-------------------------|--------------------|---|
| 1. Process              |                    | Negotiation, decision-making and actions  |
| 2. Actors and agendas   |                    | Stakeholders in water governance  |
| 3. Resources            |                    | The generality of material and non-material resources in society                        |
| 4. Mechanisms of access |                    | Specific arrangements of resources sharing access to water                              |
| 5. Outcomes             | Societal outcomes  | Positive or negative consequences for societies: on poor, gendered outcomes, and other. |
|                         | Ecosystem outcomes | Impact on resources and environment   |

Authors have selected a rather practical approach, combining Franks and Cleaver [18] framework for water governance and taking a case study approach to state quota policy using stakeholder analysis tool. Next section will further illustrate the details of the methodology used.

### 3.2. Analysis of Policy

Models and techniques in policy analysis are means by which arguments are clarified and the values and beliefs from which they are drawn are communicated effectively [22]. Policy analysis can be formally defined as 'an applied social science discipline which uses multiple methods of inquiry and arguments to produce and transform policy-relevant information that may be utilized in political settings to resolve policy problems [27]. We employed most existing techniques of policy analysis in our case study: those are discursive, interpretative, narrative and argumentative based approaches to policy analysis.

We used Geertz's 'thick description' [28] as a starting point to the ethnographic approach to participant observation. This approach takes a culture as a central point to describing the actions of actors involved, and gives meaning to those actions. It is both descriptive and interpretative. Beyond

the basic description thick description makes the voices, feelings, actions and meanings of interacting individuals [29]. The advantage of the thick description is that it makes the agendas of elite and policy makers more transparent and accessible that maybe hidden deep within bureaucratic structure or behind a veil of scientific jargon [30]. We are trying to interpret the intentions and motives of different actors that are in fact forces that make things happen in real world of social action. Since in most cases those intentions are not written down or spelled out, it is our task as a narrative analyst to attach context specific common-sense meaning using the shared experience.

*Interpretative* approach emphasizes the treatment of differences as different ways of seeing, understanding, and doing based on different prior experiences [31]. *Narrative* scheme is believed to include the empirical causal connections between events but emphasizes social intentions and motivations. It is the understanding of the ways people are embedded in wider social context of situation and society [32]. Narratives create and shape social meaning by imposing a coherent interpretation of events and actions around us [33]. The narratives scheme of knowing configures the sequence of events and actions into a unified happening by identifying a larger pattern to which they contribute. It seeks to comprehend and convey direction and purpose to human affairs by knowing and explaining [34] and geared to the metaphor or contextualism [35]. *Stories* are inherently joint social productions [32], they are situated at the interface of the individual and his wider environment and are products of social groups in which they emerge.

We followed a process of policy metanarratives to examine the competing narratives in policy controversy introduced by Roe [36] in 1994. It follows a basic model with four steps. The first step is identifying the conventional and accepted narrative that dominated a policy controversy, specifically that: the state quota system negatively impacts production and efficiency and brings hardship to the lives of people involved. Second step is to look at the existence of other narratives (so called counterstories) that did not confirm to a dominant policy narrative. So in our case the counterstory is: the state quota policy does *not* only negatively impact production and efficiency and brings hardship to the lives of people involved. Then we took a third step which is to use a comparison of two narratives to ‘tell’ a metanarrative. Here we referred to the work of literary narration developed by Riffaterre [37], which seeks to account for two original policy narratives—each the polar opposite of the other—can both be the case at the same time, showing the ways that the same events can be retold from two different points of view [32]. By doing this we tried to ease out if not to remove the elements of controversy on the very sensitive issue of state quota policy and to move it to new grounds. And lastly we presented it in a comprehensible table of stakeholder analysis to make it open to empirical policy analysis for the given problem.

Roe’s approach has been criticized for many shortcomings, which in our opinion does not reduce its usefulness [32]. We faced with two of the limitations. Although, both authors are researchers for many years, in one way or another both are beneficiaries of the given policy, this could have created a bias and the elements of social affiliation or political belief might have influenced our view of the current policy. Secondly, the process of constructing our metanarratives did not need to involve participants or actors of the policy controversy. This was largely our job as of policy analysts but the involvement of stakeholders could have produced useful insights into the process too.



### 3.3. Analysing Actors and Their Agendas

For analysis of state quota policy and its actors and agendas the most common used method would be Cost and Benefits analysis method (CBA). CBA identifies C&B of particular policy; screens the more important of the identified; enumerates each and compares the total costs and benefits, possibly by valuing them in money terms. This approach was also further improved by including secondary impacts analysis; intangibles like time and impact. Treatment of externalities, conventions about intangibles, time discounting approaches and using appropriate values other than money were further complications of this method [38]. Even after further improvements and additions CBA is criticised for favouring the rich and ignoring the politics of policy choice and the behaviour of winners and losers.

*Cost-effectiveness analysis* (CEA) assesses costs and their effect of different policy options. Best value is another term used in some countries like UK to represent CEA. *Risk-risk assessment*—is similar to CEA but it compares options to meet a set of objectives, but compares the risk of each option. *Multi-criteria analysis* avoids valuation of intangibles, it recognises that intangibles need to be identified and considered separately [39,40]. This approach could have been useful in analysing the state quota, but seemed to limit itself outside the notion of participation and inclusion that authors wanted to assess.

Generally most of the tools of economic analysis ignore the behaviour of individuals and the impact of the groups to individuals. Those tools also view individuals, largely, as economic units and assume that their overriding objective is to improve their well-being, or ‘utility’.

*Stakeholder analysis* (SA) is the process of identifying policy’s key stakeholders an assessment of their interests and the ways in which these interests affect project riskiness and viability. It was given preference over other methods because it draws from social analysis and institutional appraisal and also contributes to combining this data in a single framework; it helps to identify conflict of interests between various stakeholders; it helps to assess the appropriate type of participation by different stakeholders at various stages [41]. SA is found to be more applicable to analysing actors and different agendas of stakeholders. It potentially can be useful for policy making process too; the impact of the decision on different segments of the society can be understood and policy can be formulated for taking into account wider public interest. This framework provides a setting to comprehend perspectives of people who have potential interests in, or can influence the success or otherwise of policy, however, this tool is rarely used for policy analysis. SA is useful both for analysis of existing policies and for analysis of new ones before their implementation.

## 4. Results

### 4.1. Process

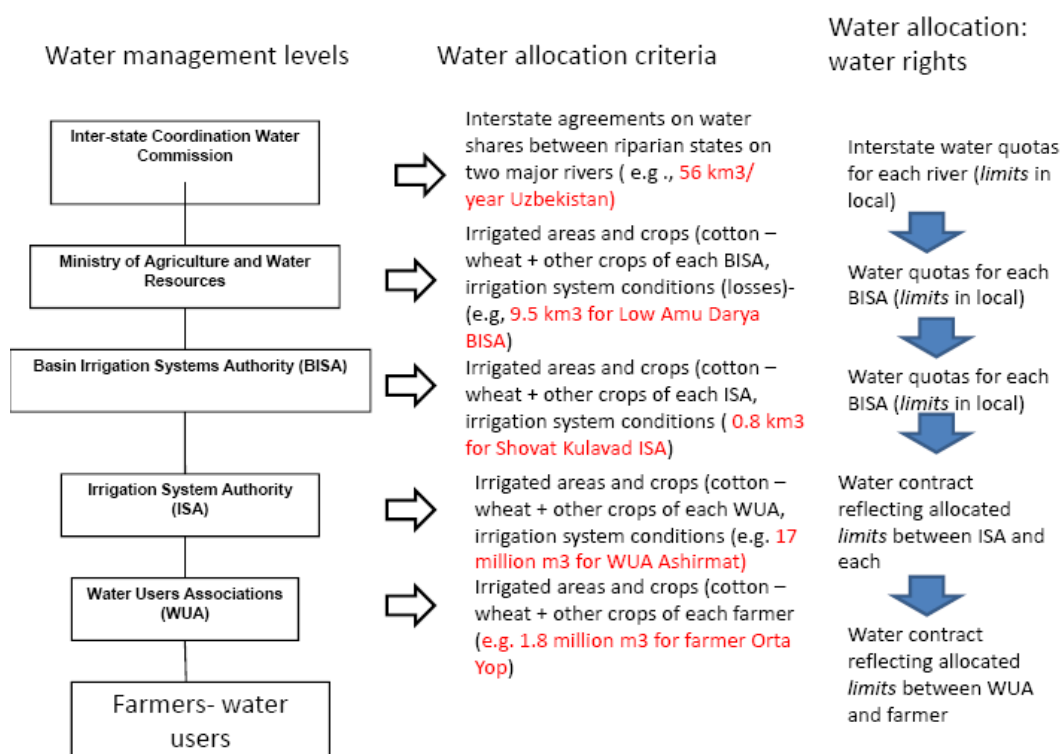
The water management under state quota system is part of centralized and hierarchical planning and distribution of the water in the irrigated agriculture. The water planning follows strict hierarchical levels, starting from interstate level up to WUA level (Figure 2). In each level water allocation decisions are made based on selected criteria (e.g., area for growing planned cotton and wheat + other irrigated crops). The decisions are made on water allocation with involvement of water managers and

decision makers (*hakimyat*—provincial and district government officials). Although other stakeholders are not present in water allocation process they apply different mechanisms to get access to the water resources.

The water allocation under the state quota system makes the process very hierarchical and bureaucratic. The process of preparing of the water allocation involves hundreds of staff of Ministry of Agriculture in the different levels (central office, UIS, BUIS). The water allocation plans are prepared for growing (*vegetatsya* in local) season and for fall-winter (*ne-vegetatsya*) periods.

However, the direct participation of the stakeholders other than water professionals and administrative managers (*hakimyat* in local) in the process of the water allocation is limited. The involvement of the water users and non-irrigation sectors in the process of water allocation are limited to the pilot activities [15]. Figure 2 below illustrates water allocation hierarchies under the state quota system.

**Figure 2.** Water allocation hierarchy, criteria and water rights under state-quota system (e.g., Uzbekistan, Low Amu Amudarya BISA, one of ISA, WUA and farmer in Khorezm region).



#### 4.2. Actors and Agendas (Stakeholders and Their Interests)

*Context:* Normally the participant observation is done by the external person who gets into the field and applies systematic rules and ethnographic algorithms to convey the meaning of the event back to the native. In our case the authors were parts of the culture in both frames of interpretation. We came to conclusions by observing the discourses around this topic. So from our experience two frames of interpretation came out:

- from population's point of view
- from the government's point of view

On one hand we find ourselves as a part of society, where we are unwillingly involved in everyday life and get information in different events involving local population, for instance, listening to taxi drivers' reflections when they give a ride (because of underemployment in the country people with higher education, formally engineers, lawyers can function as taxi drivers); through listening to neighbours in the street and relatives; by reading informal news sources, internet publications and news *etc*; during the debates with other academic colleagues who have more scientific approach to events *etc*.

Additionally, both authors formally had experience in being involved in the process of picking cotton, as a part of higher education system students are taken out to help farmers during harvest period. Normally with only 1 adult supervisor full time being responsible for 20–100 students (depending on the size of the course) of 17–21 years of age with superficial medical support and lack of basic hygiene. The daily norm for collecting cotton manually is set to be 60 kg (the norm of late 1990s). The hard physical labour of 8 hours per day with 1 hour break for lunch under the direct sun exposure was an experience which made us participant observers to the process of growing and picking cotton and a part of state quota policy. Later, the author was also involved in Red Cross project that dealt with environmental consequences of Aral Sea disaster which were mainly the consequence of poor water management due to increased water consumption for the growth of cotton—the policy outcome that was not accounted for, while designing the cotton policy. The author visited many tuberculosis hospitals and other hospitals for respiratory diseases in affected areas around Aral Sea region, being exposed to the negative externalities of a policy which affected the lives of millions.

On the other hand working for a number of years in public sector and having extended network of people who still work in high-to-medium level positions makes it possible to have alternative view on the issue; it leads to realisation of complexities of policy process. Informal talks with high level officials in unofficial meetings; informal meetings with friends who work in public sector, by analyzing formal media: the positive image of the process of cotton harvest, sense of regional competition for yields, the formal thanking of farmers for the hard work and others gives a possibility to have a 'counterstory' on the issue of state quota policy. Also reading (and in some cases writing or editing) high quality academic papers of various organisations like IWMI and others on the issue of water governance gave possibility to analyse written discourse. The accumulated knowledge and the context led to the understanding and the ability to be able to interpret the policy from insider perspective.

#### 4.2.1. Identifying stakeholders

Stakeholder tables below will analyse primary, secondary and indirect stakeholder of the state quota policy. The particular attention will be placed on the affects of state quota system into water governance in the region. By doing stakeholder analysis we assigned subjective meaning to social events, however we transformed the fragmented information into meaningful, structured and organized whole. Stakeholder analysis gives us possibility to stress which elements of the whole is more meaningful and consequently we can draw attention of audience to those elements. It is a useful

process through which authors transmit the information by interpreting them through available social, cultural and psychological principles in hand [32].

*The process of drawing up Table 2 by ODA* [41]: first we draw up a list of all potential stakeholders, and then we divide them into two main categories: primary and secondary stakeholders. Primary stakeholders are those people and groups ultimately affected by the policy. This includes intended beneficiaries or those negatively affected. Normally primary stakeholders are divided by gender, social or income classes, occupational or service user groups. Secondary stakeholders are intermediaries in the process of implementation of the policy. They can be divided into funding, implementing, monitoring and advocacy organisations, or simply governmental, NGO and private sector organisations. In most cases it will also be necessary to consider key individuals as specific stakeholders (in our case those are Hokims (governors) of regions). Also there may be some informal groups of people who will act as intermediaries, for example, politicians, and local leaders, respected persons with social or religious influence. ODA suggested a checklist for identifying stakeholders, with slight modification we have applied it to our policy analysis:

#### Checklist for identifying stakeholders:

- List all primary and secondary stakeholders
- Identify all potential supporters and opponents of the policy
- Identify different types of female stakeholder to take gender into account (at both primary and secondary levels)
- Divide primary stakeholders into user/occupational groups, or income groups
- Identify the interests of vulnerable groups (especially the poor)
- Analyse if there are any new primary or secondary stakeholders that are likely to emerge as a result of the policy

The resulting list of stakeholders forms the basis of a tabulation of each stakeholder's interests in the policy, and the likely impact of the policy on them. Interests of all types of stakeholders may be difficult to define, especially if they are "hidden", or in contradiction with the openly stated aims of the organisations or groups involved. A rule of thumb is to relate each stakeholder to the objectives of the policy [38]. The below checklist by ODA helps to draw out interests of stakeholder:

#### Checklist for drawing out interests

- What are the stakeholder's expectations of the policy?
- What benefits are there likely to be for the stakeholders?
- What resources will the stakeholder wish to commit (or avoid committing)?
- What other interests does the stakeholder have which may conflict with the policy?
- How does the stakeholder regard others in the list?

**Table 2.** Stakeholder Table for a State Quota Policy.

| #                             | Primary Stakeholders  | Interests  | Likely impact of the policy                                 | Relative priorities of interest |
|-------------------------------|---|--|---|---------------------------------|
| 1                             | Local population (middle to low income groups)                                      | *Protection from food deficit<br>*Lower prices for agricultural products   | (+)<br>(?)  | 1                               |
| 2                             | Farmers   | *Freedom to grow crops they want<br>*Subsidies inputs<br>*Higher profitability<br>*More employment opportunities<br>*Better working conditions<br>*Higher yields<br>*Expand production<br>*Labour efficiency<br>*Stability for planning and income | (-)<br>(+)<br>(-)<br>(-)<br>(?)<br>(-)<br>(-)<br>(-)<br>(+) | 1                               |
| 3                             | The government  | *Increase exports<br>*Decrease imports<br>*Increase budget of the country by exporting cotton<br>*Reduce agricultural monopolies<br>*Achieve wheat independence  | (+)<br>(+)<br>(+)<br>(+)<br>(+)                             | 1                               |
| <b>Secondary Stakeholders</b> |   |  |   |                                 |
| 4                             | Ministry of Finance   | *More inflows to the budget<br>*Less expenditure   | (+)<br>(+)  | 2                               |
| 5                             | Ministry of Agriculture and Water Management  | *More control over agricultural production for better planning<br>*Availability of more food for growing population<br>*Better water productivity<br>*Preservation of water resources  | (+)<br>(?)<br>(-)<br>(-)                                    | 2                               |
| 6                             | Khokimiyats   | *More control and more power<br>*Less administrative burden  | (+)<br>(-)  | 3                               |
| 7                             | Water Management Organizations  | *Efficient use of water resources<br>*Services paid on time for maintenance of irrigation systems  | (-)<br>(-)  | 2                               |
| 8                             | Local <i>Khokims</i> /Mayors  | *More power, more control  | (+)   | 3                               |
| 9                             | Children helping parents after school and students of HEI helping in cotton harvest | *No disruption of studies  | (-)   | 5                               |
| <b>Indirect stakeholders</b>  |   |  |   |                                 |
| 10                            | Dehkans   | *Access to fertile land<br>*Better access to water   | (-)<br>(-)  | 4                               |
| 11                            | Banks and other financial institutions  | *Return on investment<br>*No bad credits<br>*Less subsidised credits   | (?)   | 4                               |

Table 2. Cont.

|    |                                |   |                   |   |
|----|--------------------------------|---|-------------------|---|
| 12 | Environmental organizations    | *Preventing environmental degradation<br>*Decrease salinization<br>*Decrease soil erosion | (–)<br>(?)<br>(?) | 5 |
| 13 | People living in Aral Sea zone | *Protection from food deficit<br>*Improved environmental situation                        | (–)<br>(–)        | 4 |
| 14 | Neighbouring counties          | *Access and management of water in their territories                                      | (?)               | 5 |

Note: + positive impact of the policy, – negative impact of the policy, ? unknown; 1—highest priority and 5—lowest priority.

Placing stakeholders into the table gives a good grasp of their multiple interests and the ways in which those interests affect the policy (positive, negative or unknown). Thus it combined both institutional appraisal and social analysis in a single framework. The stakeholders were divided into primary and secondary stakeholders in the above table, they were further classified according to their income classes, or type of the enterprises that are involved in (farmers, dekhkans). Those who participated in the delivery of the process, for instance funders Ministry of Finance; monitoring agencies like Hokimiyats; key individuals like Hokims and others were classified as secondary stakeholders.

The state quota policy is intended primarily to protect local population from food deficits; Uzbekistan is the most populous country among its neighbouring countries and accounts for over 45% of the total population of the region. Over 50% of the population of Uzbekistan is under 25 years of age which means it has a growing population and the demand for wheat will continue growing; at this point it seems quite necessary to have wheat independence. As we can see from the table the key stakeholders to which the state quota system is directed for are labelled ‘local population’ and the policy has a favourable impact on them.

Other primary stakeholders are farmers; they are in fact both primary stakeholders to whom the policy is intended for, since having a state to purchase their products, in theory, is a genuine support scheme that is used in most of the countries to protect local agricultural production. However, at the same time farmers are actually secondary stakeholders too, since they deal with the actual implementation of this policy. At the same time they are also a part of the middle-to-low income population group too, so there is a conflict of interest in relation to the policy within one stakeholder. So they are the ones who are affected most by this policy. However, they score negative on most of the interests listed. Their freedom to grow the desired crops is restricted by the policy; their desire to have higher profitability is also negative since the government buys their output on a fixed price which is much lower than in the international markets. They want to expand their production and use the land for growing of other products to which there is a higher demand in the local market, and they can’t do it either. It is obvious that farmers are negatively impacted by this policy.

On the other hand there is a government [we refer to government as to a set of policy making institutions, that includes but not limited to—Ministry of Agriculture and Water Management, Cabinet of Ministers, Oliy Majlis (Parliament) and others] who is another stakeholder and we can see that the

effects of the policy are mostly positive. The government has a possibility to increase export of cotton, decrease import of wheat, and achieve wheat independence.

We can also see that there is a conflict of interests between the key stakeholders: local population and farmers. Local population wants to have access to wheat and whereas farmers want to grow the crops they desire and thus better living incomes. In this case the policy is totally ignoring the latter and only focusing on the former.

#### 4.2.2. Assessing 'Influence' and 'Importance' of stakeholders

In the table below we classified stakeholders according to their relative influence and importance to state quota policy. We here refer to influence as to how powerful a stakeholder is and we refer to importance as to those stakeholders whose problems, needs and interests are priority for the state quota policy. In the table below we see that section B lists and classifies stakeholders who have high degree of influence on the project and who also has high importance whereas in Section D the stakeholders have low importance and low influence. And within each section we further classify them according to the two criteria.

'Influence is the power which stakeholders have over a project—to control what decisions are made, facilitate its implementation, or exert influence which affects the project negatively. Influence is perhaps best understood as the extent to which people, groups or organisations (*i.e.*, stakeholders) are able to persuade or coerce others into making decisions, and following certain courses of action' [41].

Power may derive from the nature of a stakeholder's organisation, or their position in relation to other stakeholders (for example, line ministries which control budgets and other departments). Other forms of influence may be more informal (for example, personal connections to ruling politicians). It is also necessary to consider stakeholders whose power, and therefore influence, will increase because of resources introduced by the policy [41].

Importance indicates the priority given to satisfying stakeholders' needs and interests through the policy. Importance is likely to be most obvious when stakeholder interests in a policy converge closely with government's objectives. 'Importance is distinct from influence. There will often be stakeholders, especially unorganised primary stakeholders, upon which the project places great priority (e.g., women, resource poor farmers, slum dwellers, ethnic minorities *etc.*). These stakeholders may have weak capacity to participate in the project, and limited power to influence key decisions' [41]. Some questions we considered while drafting a matrix:

- Which problems, affecting which stakeholders, does the policy seek to address or alleviate?
- For which stakeholders does the policy place a priority on meeting their needs, interests and expectations?
- Which stakeholder interests converge most closely with policy objectives?

**Table 3.** Matrix classification of stakeholders according to relative influence on, and importance on State Quota Policy, Uzbekistan.

|                   |   |                            |  |
|-------------------|---|----------------------------|--|
| <b>Importance</b> | A   | B                          | <b>Primary</b><br>1. Local population<br>2. Farmers<br>3. The government<br><b>Secondary</b><br>4. Ministry of Finance<br>5. Ministry of Agriculture and Water Management<br>6. Water Management Organizations<br>7. Khokimiyats<br>8. Local Hokims/Mayors<br>9. Children and students<br><b>Indirect Stakeholders/agents</b><br>10. Dehkans<br>11. Banks<br>12. Environmental Organizations<br>13. People in Aral Sea area<br>14. Neighbouring counties |
|                   | D   | C                          |  |
|                   | *2<br><br><br>*11<br><br>*14                                      | *1<br><br><br>*3<br><br>*6 |  |
|                   | *4<br><br>*7<br><br>*12<br><br>*9<br><br>*8<br><br>*10<br><br>*13 | *5                         |  |
|                   |   | <b>Influence</b>           |  |

Legal hierarchy and political status give the Ministry of Finance and government the possibility to have a high degree of influence and high importance in our matrix. Whereas primary stakeholder like Farmers and Middle-to-low income population group falls into section A, since despite their importance they have little influence on the policy and they need special initiatives if their interests are to be protected. In box C there is stakeholder who has high influence but their interests are not in line with project objectives. In our block C we have a Ministry of Agriculture and Water Management.

This table matrix shows the power relations between the different stakeholders. We can observe that the large number of stakeholders fall into section D. with low importance and low influence. The matrix is another proof for the hierarchical nature of the society and that the power is accepted *de facto* in the society without questioning it and that the interests of low level population groups are not taken into account. If the numbers of low-income population grows, which is the case post-independence, without much social protection, hierarchical decision making which normally are made by those who do not fall into low-income level groups can create further social unrests in the society.

The above analysis gives an opportunity to assess major risks and negative responses on the policy. Normally for any policy to be successful its benefits should overweigh costs. In the case of state quota policy, in the first glance it seems to fulfil the stated aim which is to have a protection from food deficit and this benefit maybe much higher than many of the other social costs involved. Although in the long run if not taken into consideration the overall environmental situation may bring detrimental results for the local population. Normally when the policy is in the early stages of consideration risks



and assumptions of it are considered relating to the primary stakeholders. It seems that in the case of state quota policy this has not been done or at least it is not as explicit as it should be.

#### 4.2.3. Stakeholder participation

Stakeholder analysis contributes to the process of deciding how the key stakeholders are to be included in the policy process. "Key" stakeholders are those of high importance, high influence, or both. Key stakeholders with high influence and importance to project success are likely to provide the basis of the policy "coalition of support", and are potential partners in planning and implementation. Conversely, stakeholders with high influence, but with low importance to project success may be "managed" by being consulted or informed [41].

Social inclusion and participation is one of the key components of good governance; citizen participation is a cornerstone of democratic political processes [32], it is also one of the pre-requisites of improving water governance. If key stakeholders like local population and farmers are included in the initial stages of a policy and they participate in its design it will create the feeling of ownership for the project, objectives of the policy could serve as a binding idea to achieve as oppose to if a policy is simply imposed. 'By decreasing conflict and acceptance of or trust in decisions by the government agencies it can provide the citizens with an opportunity to learn about policy problems; such learning can improve the chances that they will support the resulting decisions' [32]. It also increases the chances of clearing up misunderstandings about the nature of controversy and the view of various participants. Stakeholder inclusion may take longer time but will generate commitment of those involved. The below table gives recommended scenario for stakeholder participation in the process of decision making and policy formulation concerning state quota policy. If all stakeholders listed are taken on board while making a decision or as early as agenda setting phase the results will likely be a better catered policy which takes into account needs of all strata of society.

Table 4 suggests a way of involving stakeholders in the design of the policy from early stages. It is clear that key stakeholders need to be at least informed and some with existing knowledge should rather be consulted from as early as identification stage. Some stakeholders like Dehkans who are affected by the outcomes of the policy should be included as partners during the entire process.

Inclusion of the stakeholders during the decision making makes policies better integrated with reality and normally leads to the design of policies catered for the needs of population from the point of view of public interests. It also enables the voice of the poor and most vulnerable to be heard. This will require the creation of additional mechanisms, methods and infrastructure to make it happen, however, will be a good start for building inclusive society and introducing elements of bottom-up policy. This will require on-going political will coupled with donor assistance.

However, hoping that participation of stakeholders will leave to a better policy outcome immediately would be politically naïve. Differences in power, social status, knowledge and other characteristics will play a role in making the voice of poor heard. So it is not a 'magic-cure' for economic and social problems. However, 'it does hold out the possibility of bringing forth new knowledge and ideas capable of creating and legitimizing new interests, reshaping our understanding of existing interests and influencing political pathways along which power and interest travels' [32]. Given the complexity of policy choices, decisions comprise a trade-off; there are normally some

people who loose as a result of any policy and some who win. Therefore, ensuring that policy options are available to the public, and procedures exist to collect and comment upon public input, legitimizes policy decisions.

**Table 4.** Summary participation matrix for State Quota Policy.

| Type of participation<br>Stage in cycle | Inform                              | Consult  | Partnership                                   | Control   |
|---|-------------------------------------|--|---|---|
| <b>Identification</b>                   | *Local population<br>*Farmers       | *Ministry of Agriculture and Water Management<br>*Farmers<br>*Water management organizations                         | *Ministry of Agriculture and Water Management |   |
| <b>Planning</b>                         | *Local population<br>*Farmers       | *Ministry of Agriculture and Water Management<br>*Farmers<br>*Water management organizations<br>*Ministry of Finance | *Environmental organizations<br>*Dehkans      | *Ministry of Finance                            |
| <b>Implementation</b>                   | *Farmers                            | *Ministry of Agriculture and Water Management<br>*Farmers<br>*Water management organizations                         | *Dehkans                                      | *Ministry of Finance<br>*Khokimiyats<br>*Hokims |
| <b>Monitoring and evaluation</b>        | *Farmers<br>*Khokimiyats<br>*Hokims | *Khokimiyats<br>*Hokims  | *Khokimiyats<br>*Hokims                       | *Khokimiyats<br>*Hokims                         |

The idea of citizen participation is further complicated by local cultural pre-condition that authority is not to be questioned, and normally there is a very little tolerance for alternative views in Uzbekistan, if they are not coming from the people who are united around the same or at least a similar policy belief. These are normally the people who interact with each other on a regular basis, sharing more specific knowledge based understanding about problems and solutions. Normally those ideas which are snot in line with mainstream ideas on policy issues are not tolerated. So there is an issue of overcoming power distance within the society and inherent acceptance of hierarchy and the implication that inclusive decision making might mean weakness of the governor to governed, however, this issue is not discussed in-depth in the current paper; it is rather a topic for further research by the authors.

#### 4.3. Resources

The different stakeholders use various techniques so called ‘resources’ to control the state quota. Following types of the resources are mainly utilised by stakeholders: (i) regulatory resources—access to decision making on water allocation, (ii) information resources—access to information regarding water allocation and distribution, (iii) professional resources—links with water management organizations (or individual bureaucrats in water sector), (iv) administrative resources—access to local government office (hakimyat) and (v) technological resources—access to technologies and

infrastructure on water network. The application of the different resources depends on the position and agenda of the actor.

**Figure 3.** Agents, agendas and resources in Uzbek setting.

|          |  |  |   |   |   |
|----------|--|--|---|---|---|
| Agent    | <u>State</u>   | <u>Khakim</u>  | <u>WUA Chairman</u>   | <u>Farmer</u>   | <u>Rural people/villagers</u>   |
| Agenda   | More production from A unit of area/ water                 | (province/district) fulfillment of state quota plan for his/her area fulfilled   | water reaches his/her WUA and problem areas   | all his/her fields are irrigated on time  | water is enough for livelihood needs  |
| ↓        |  |  |   |   |   |
| Resource | Regulations, rules, State force and tools, Quota contracts | control of daily water distribution through WMOs, representatives in rural areas to report and implement the concrete tasks, use of police to control the implementation, use of his links in the locality | mobilization of staff, using links with khakim or other high level offices to get water to his/her area, mobilizing people- water users (both physical and monetary), appeal to local leaders, physically be present in outlets | mobilizes his/her workers for irrigation, provides support to WUA, uses links, uses technology (pumps, pipes, tractors, etc.), participates appeals to khakim | appeals to rural leadership, WUA leader, staff, applies technologies, links, appeal to khakim, non-violence protest |

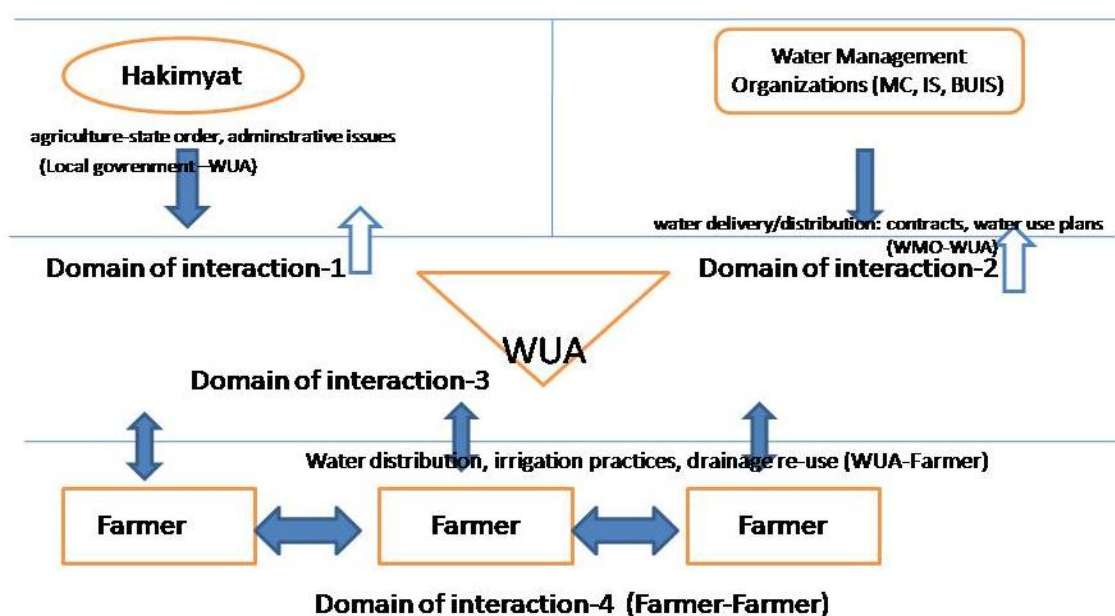
If the state uses regulatory and administrative resources as the major mechanism to access water resources, the WUA chairman may apply professional and technological resources, whereas a farmer may apply technological and administrative resources, and others. The state-quota is a hierarchical process and therefore the access to different resources depends very much on where, in this hierarchical system, the actor is located. The higher the location of the actor within the hierarchy the better the access to different resources he/she has. This limits also weaker groups or individuals from the access to different resources including water resources and therefore leads to social exclusion.

*4.4. Domains and Mechanisms of Access*

The water distribution in comparison with allocation is more de-centralized process, because of huge irrigation network and many actors (stakeholders) involved in each level. Although national and regional level governments play an important role on water management issues they have no real means to distribute water. Because, water is actually distributed at the canal and Water Users Association (WUA) level, where mainly lower level water managers, e.g., canal managers and/or operators are controlling the gates and regulation infrastructure work on a daily basis. Therefore, although water allocation process is seen as very structured, hierarchical process its implementation (water distribution) often becomes daily ‘water control’ [ 42 , 43 ] struggle between different stakeholders (cotton-wheat farmers vs. other water users). Different players with different resources interact with each other in four domains with regard to access to the water resources: (i) administrative

domain where local government lobby for state-quota interests, (ii) water management domain where water management organizations (WMOs) lobby for the interests of the state on water resources management, (iii) farmers lobby on their own behalf and (iv) farmers of different types interact with each other (as can be seen from the Figure 4 below). The de-collectivization has changed socio-political situations in the region and led to the formation of different interest groups. There are at least three different groups of farms in rural Uzbekistan [44]. The first group of farms are under state quota, growing cotton and wheat for the state with 10 to 20 ha of irrigated land, the second group is growing more commercial crops, such as rice, vegetables and fruits with land sizes around 1 ha and less. The third group is smallholder landowners which grow mainly crops for the subsistence of their livelihoods.

**Figure 4.** Domains of interactions on water management at the WUA level (Abdullaev forthcoming).



The different groups of farmers apply different mechanisms of access to the various resources. For example, the farmers with larger irrigated land and higher incomes buy diesel or electric pumps for irrigation of their fields. They do allow neighbour farmers and smallholders to use them, but only if the latter pay for the cost of operation of the pumps. The smaller land owners and weaker groups are not represented in WUA structures at present. WUA is also trying to change the existing situation for instance by assigning pumps to individual farmers. The operation and maintenance of the pumps, especially payments for electricity was a heavy burden on WUAs [19]. Although farmers under the state quota have priority on water distribution then other water users, the actual pattern of access depends on (i) their physical location within the irrigation network and (ii) their links within socio-political network. Most farmers under state quota system use their personal links with hakimyat, which is an administrative resource, as a last resource, in order to get access to irrigation water.

Access to water though, is not always directly dependent on Uzbek government. Central Asia has been considered as “a hot” area for international media and researchers for many years aftermath the

collapse of the Soviet Union's [21]. Recently this issue again came back to the world public discussion arena. Failed to cooperate on transboundary water management, Central Asian states are staging again "cold war" on water issues. The regional bodies meant for transboundary water management are idle because of absence of political will for regional cooperation by riparian states. Arbiters on settling of the water conflicts are world powers Russia, EU, USA, and China, which are present in the region for a number of conflicting interests including its rich energy resources. Since the independence the large amounts of both grants and credits from international donors were provided for Central Asian countries to improve their water management and to build capacity of regional water institutions. For the last decade the interstate water institutions of Central Asia were considered as one of the best examples around world for developing viable annual water allocation agreements; for conducting regional cooperation on water research, data and information exchange; and capacity building [45,46]. However, at present interstate relations have worsened and interstate institutions alone cannot solve water problems of the region. The solution to the region's water problems lies not at the interstate level rather at the national water management systems of riparian states. CA states have excellent institutions at transboundary level; however, national water management institutions are creating obstacles for effective cooperation. Although there is no blueprint on the effective transboundary water management principles of integrated water resources management and river basin management approaches more specifically ownership and political commitment are good case for effective and equitable water allocation and harmonisation of water governance systems of riparian states.

#### *4.5. Outcomes: Negative Externalities or Social Costs*

The water management under state quota system is a complex process where state interests and interests of other stakeholders are integrated through bureaucratic water allocation and more chaotic water distribution processes. Differently from more open and democratic water governance, water management under cotton-quota system does not have feedback systems from different stakeholders. Therefore, actions of different stakeholders are not coordinated and regular clashes of their interests in the different domains of interactions take place. The most vulnerable are environment (nature) and smallholder water users. These two groups are disconnected from the use of various resources and access mechanisms to the water distribution.

The cotton-wheat quota system which requires extensive water resources already created a natural environment around irrigated areas. There are hundreds of lakes and swamps with diverse and rich biota. The lakes are fed by drainage water and excessive run off from irrigated areas. If water inflow to the irrigated areas will be reduced these lakes will start drying up, as a result causing similar problems as the Aral Sea. In most of the cases, the lakes are the source of fish, wildlife and income for local population. The other important issue which comes up as an environmental consequence of the irrigated agriculture is the dependence of as much as 60% of rural population for their livelihood uses. The local population in most of the irrigated rural villages are not provided with piped or safe drinking water sources therefore they use water from irrigation and drainage networks. The easiest way for them is either digging wells or hand pumps or getting water directly from the irrigation canals for livelihood uses. And at present, the above is not taken into account by existing water governance system. This may lead to the deterioration of environmental conditions, salinity, drying up of lakes,

reduced biological diversity of the irrigated areas, lack of drinking water, and others. Therefore, the water usage in irrigated agriculture should be looked in the context of multi-purpose water use in the rural areas. The singling out only irrigation use will not reflect reality of water resources management in rural areas.

The emerging social and production differences in rural Central Asia as a result of land distribution have long-lasting impact on water management. The different groups use technical, organizational and socio-political 'water control' tools to get an access [47] for precious water resources. This dynamic situation on water management at grassroots levels have made water distribution more a social activity, the emerging new classes and differentiation in societies requires more careful planning of water management. The ignorance of this fact will lead to further deterioration of livelihoods of people who already were discriminated by de-collectivization. Continuing things as now and considering only state or semi-state bodies as major players of water management might lead to the collapse of existing mechanisms and institutions for water management [48].

## 5. Discussions and Results

### *Lessons Learnt*

1. Consultative and inclusive policy making and decentralisation of top-down policy making process and water decision making is a pre-requisite for formulating an effective and functioning policy. People in the grass roots, *i.e.*, those who are primary stakeholders like Farmers, Representatives of Dehkhans have an indigenous knowledge, the history and the tradition of managing agriculture and water in the region. For centuries these people have been growing cotton and wheat and other agricultural products in that area. Stakeholder participation may take longer time and effort and requires the set up of additional institutions or infrastructures. It would also require a major shift in thinking of policy makers that the government is not a regulator any more, it is rather a 'service provider' and citizens are 'customers' of those services.
2. Implanting top-down quota system seems to have positive effects on a larger public and serves to the good intention of the government to have grain independence. However by allocating land for cotton and wheat the government is decreasing the motivation of farmers to get higher yields from the lands.
3. Western governance models might not be directly applicable to the countries like Uzbekistan in its entirety. Some adjustment is crucial for success. Donor led projects with heavy doses of external advice backed by resources is seen a norm for developing countries. By contrast western states are more autonomous in making decisions about their development paths [49]. With each new major shift in thinking practice in the west, there is first a period of attempted straightforward policy transfer, followed by concern about failures of implementation, followed by an attempt to reform the government and institutions of developing countries [50]. It is also 'absence of informed analysis and the dominance of those concentrating on the transfer of the Western know-how that increase the danger of losing touch with the realities' [51].

4. The quota system although have many shortcomings has major role on regulating water management for irrigation. In other countries where market economy was supposed to regulate agriculture, water distribution ended up becoming a very chaotic process [52]. However, the system which is now in place ignores many emerging socio-political trends in the local level, creating space for conflicts in the future. Recognition of demands of non-irrigation users, *i.e.*, environment and livelihood needs into the water allocation process is a pre-requisite for sustainability of rural livelihoods. Improved water governance, such as inclusion of different stakeholders at least on water distribution decisions will reduce tensions over the water.

## 6. Conclusions

Socio-economic development is increasingly linked to vigour and effectiveness of policy making. Decision-makers recognise that without a reliable instrument for implementation, policies remain pipe dreams. In both, past and present, countries have struggled to create and manage public bureaucracies. From kings of the medieval era to the emperors of China, establishment and management of an efficient public administration has been on top of the agenda. If the example of Uzbekistan, its politics and transformation, so deeply rooted in tradition, so proud and self confident is to teach us a lesson, it is that autonomy in a modern period is limited and constrained, and a lot of effort and initiative is needed to translate recommendations and suggestions into co-ordinated policies and management systems.

The application of governance analysis framework for Uzbek conditions helped to shed a light on very complex socio-political process of water management under state quota system. The tool was instrumental for analysing water allocation and water distribution processes under state-centric environment. The identification of major stakeholders and their relevance to the state quota system also helped with identifying what resources, access mechanisms are needed for getting access to water. The lessons learnt from this research create an approach which could be applied for the water management governance analysis in similar conditions.

## References

1. Moll, F. Nirvana concepts, storylines and policy models: Insights from the water sector. *Water Alternatives* **2008**, *1*, 131-156.
2. Dellapenna, J.W. Adapting the law of water management to global climate change and other hydro political stresses. *J. Am. Water Resour. Assoc.* **1999**, *35*, 1301-1326.
3. Kaufmann, D.; Kray, A.; Mastruzzi, M. Governance matters VIII: aggregate and individual governance indicators, 1996–2008. In *Policy Research Working Paper Series, No. 4978*; Work Bank: Washington, DC, USA, 2009.
4. The World Bank. *World Development Report 1996: from Plan to Market*; Oxford University Press: New York, NY, USA, 1996.
5. *Central Asian Human Development Report: Bringing down the Barriers: Regional Cooperation for Human Development and Human Security*; United Nations Development Programme: New York, NY, USA, 2006.

6. Hesse, J.J. Rebuilding the state: public sector reform in Central and Eastern Europe. In *Public Sector Reform: Rationale, Trends and Problems*; Lane, J., Ed.; Sage Publications: London, UK, 1996; pp. 114-146.
7. Kotchegura, A. A decade of transition over: what is the administrative reform agenda. In *Civil Service Systems in Comparative Perspective*; Verheijen, T., Ed.; Edward Elgar: Cheltenham, UK, 1999; p. 21.
8. Gleason, G.; Motyl, A.J. *The Central Asian States*; Westview Press: Oxford, UK, 1997; p. 586.
9. Stevens, D.; Mukhamedova, L. Social responsibility at the grassroots: the influence of 'mahalla' community organisations on the CSR practices of small and medium enterprises (SMEs) in Uzbekistan. In *Culture and Corporate Governance*; Aras, G., Crowther, D., Eds.; Social Responsibility Research Network: Leicester, UK, 2008.
10. Cosgrove, W.J.; Rijsberman, F.R. *World Water Vision: Making Water Everybody's Business*; Earthscan Publications: London, UK, 2000.
11. Abdullayev, I.; Kazbekov, J.; Manthritilake, H.; Jumaboev, K. Participatory water management at the main canal: a case from South Ferghana canal in Uzbekistan. *Agr. Water Manage.* **2009**, *96*, 317-329.
12. Rogers, P.; Hall, A. *Effective Water Governance*; TEC Background Papers No. 7; Global Water Partnership: Stockholm, Sweden, 2003.
13. UNDP Water Governance Facility. Available online: <http://www.watergovernance.org/aboutwatergovernance/whatiswatergovernance.html> (accessed on 15 November 2009).
14. *Building Integrity to Ensure Effective Water Governance*; Transparency International: Berlin, Germany, 2008.
15. Ministerial Declaration of The Hague on Water Security in the 21st Century. Available online: <http://www.waternunc.com/gb/secwwf12.htm> (accessed on 15 November 2009).
16. Bonn Freshwater Conference. Available online: <http://www.africanwater.org/bonn.htm> (accessed on 15 November 2009).
17. *United Nations Millennium Declaration*; United Nations: Geneva, Switzerland, 2000.
18. Frank, T.; Clever, F. Water governance and poverty: a framework for analysis. *Progress in Development Studies* **2007**, *7*, 291-306.
19. Abdullayev, I.; Nurmetova, F.; Abdullaeva, F.; Lamers, J. Socio-technical aspects of water management in Uzbekistan: emerging water governance issues at the grass root level. In *Central Asian Water*; Rahaman, M., Varis, O., Eds.; Water & Development Publications: Helsinki, Finland, 2008; pp. 42-48.
20. Kandiyoti, D. Pathways of farm restructuring in Uzbekistan: pressures and outcomes. In *Transition, Institutions and the Rural Sector*; Spoor, M., Ed.; Lexington Books: Lanham, MD, USA, 2003; pp. 143-162.
21. Spoor, M. *Transition, Institutions, and the Rural Sector*; Lexington Books: Lanham, MD, USA, 2004.
22. Abdullayev, I.; de Fraiture, Ch.; Giordano, M.; Yakubov, M.; Rasulov, A. Agricultural water use and trade in Uzbekistan: situation and potential impacts of market liberalization. *Water Resources Development* **2009**, *25*, 47-63.



23. Dukhovniy, V.; Mirzaev, N.; Sokolov, V. IWRM implementation: experiences with water sector reforms in Central Asia. In *Central Asian Water*; Rahaman, M., Varis, O., Eds.; Water & Development Publications: Helsinki, Finland, 2008; pp. 19-35.
24. Department for International Development. *Eliminating World Poverty: Making Governance Work for the Poor*; DFID: London, UK, 2006.
25. Spoor, M. *Globalisation, Poverty and Conflict: a Critical 'Development' Reader*; Kluwer Academic Publishers: Norwell, MA, USA, 1994.
26. Bloch, P.C. Agrarian reforms in Uzbekistan and other Central Asian countries. In *Land Tenure Center Working Paper Series*; Land Tenure Center, University of Wisconsin–Madison: Madison, WI, USA, 2002.
27. Dunn, W.N. *Public Policy Analysis*; Prentice-Hall: Englewood Cliffs, NJ, USA, 1981.
28. Geertz, C. *The Interpretation of Cultures*; Basic Books: New York, NY, USA, 1977.
29. Denzin, N. *Interpretative Interactionism*; Sage Publications: Newbury Park, CA, USA, 1989.
30. Thompson, W.B. Policy making through thick and thin: thick description as a methodology for communication and democracy. *Policy Sci.* **2001**, *24*, 63-77.
31. Yanow, D. The communication of policy meanings: implementation as interpretation and text. *Policy Sci.* **2000**, *26*, 41-66.
32. Fisher, F. *Reframing Public Policy: Discursive Politics and Deliberative Practices*; Oxford University Press: New York, NY, USA, 2003.
33. Kaplan, T.J. *The Narrative Structure of Policy Narratives: Beginnings, Middles, and Ends: the Argumentative Turn in Policy Analysis Planning*; Duke University Press: Durham, NC, USA, 1993.
34. Bruner, J. *Actual Minds Possible Worlds*; Harvard University Press: New York, NY, USA, 1986.
35. Sarbin, T.R. *Narrative Psychology: the Storied Nature of Human Conduct*; Praeger: New York, NY, USA, 1986.
36. Roe, E. *Narrative Policy Analysis*; Duke University Press: Durham, NC, USA, 1994.
37. Riffaterre, M. *Fictional Truth*; John Hopkins University Press: Baltimore, MD, USA, 1990.
38. Squire, L.; van der Tak, H. *Economic Analysis of Projects*; Johns Hopkins University Press: Baltimore, MD, USA, 1975.
39. Howlett, M.; Ramesh, M. *Studying Public Policy: Policy Cycles and Policy Subsystems*; Oxford University Press: Toronto, Canada, 1995.
40. Parsons, W. *Public Policy: an Introduction to the Theory and Practice of Policy Analysis*; Edward Elgar: Northampton, MA, USA, 1995.
41. *Guidance Note on How to Do Stakeholder Analysis of Aid Projects and Programmes*; Overseas Development Administration: London, UK, 1995.
42. Mollinga, P.P. Water policy—water politics: social engineering and strategic action in water sector reform. In *ZEF Working Paper Series 19*; Center for Development Research (ZEF): Bonn, Germany, 2009.
43. Mollinga, P.P. On the waterfront. Water distribution, technology and agrarian change in a South Indian canal irrigation system. In *ZEF Working Paper Series 19*; Center for Development Research (ZEF): Bonn, Germany, 2003.

44. Trevisani, T. Land and Power in Khorezm: Farmers, Communities and the State in Uzbekistan's Decollectivization Process. PhD Thesis, Institut für Ethnologie, Freie Universität Berlin, 2007.
45. Cai, X.M.; McKinney, D.C.; Rosegrant, M.W. Sustainability analysis for irrigation water management: concepts, methodology, and application to the Aral Sea region. In *EPTD Discussion Papers No. 86*; International Food Policy Research Institute (IFPRI): Washington, DC, USA, 2008.
46. Björn, G. Towards sustainable water management in Central Asia. In *Central Asian Water*; Rahaman, M., Varis, O., Eds.; Water & Development Publications: Helsinki, Finland, 2006.
47. Ribot, J.; Nancy, L.P. A theory of access. *Rural Sociol.* **2003**, *68*, 153-181.
48. Abdullayev, I.; Kazbekov, J.; Manthritilake, H.; Jumaboev, K. Participatory water management at the main canal: a case from South Ferghana canal in Uzbekistan. *Agr. Water Manage.* **2009**, *96*, 317-329.
49. Dolowitz, D.P.; Marsh, D. Who learns what from whom: a review of the policy transfer literature. *Polit. Stud.* **1996**, *44*, 343-357.
50. Batley, R.A.; Larbi, G.A. *The Changing Role of Government: The Reform of Public Services in Developing Countries*; Palgrave Macmillan: New York, NY, USA, 2004.
51. Hesse, J.J. Rebuilding the state: public sector reform in Central and Eastern Europe. In *Public Sector Reform: Rationale, Trends and Problems*; Lane J., Ed.; Sage: London, UK, 1996; pp. 114-146.
52. Abdullaev, I.; Ul Hassan, M.; Manthritilake, H.; Yakubov, M. *The Reliability Improvement in Irrigation Services: Application of Rotational Water Distribution to Tertiary Canals in Central Asia*; International Water Management Institution: Pelawatte, Sri Lanka, 2006.

© 2009 by the authors; licensee Molecular Diversity Preservation International, Basel, Switzerland. This article is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/3.0/>).