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Institutional Change in Central-Eastern European Irrigation Systems: The Bulgarian Case

Insa Theesfeld¹

1 Introduction

In Bulgaria's current irrigation sector we observe a large discrepancy between formal and effective institutions for resource governance. Collective action management solutions have been propagated for more sustainable resource use from the Bulgarian government and the World Bank in recent years. The Bulgarian government enacted two new laws: the Bulgarian Water Law, implemented in January 2000, and the Water User Association Act, which came into force in March 2001. The aim was to cope with the unreliable irrigation water provision and appropriation and to increase formal rules' effectiveness. This should be done by reforming and decentralizing the centrally planned water sector and increasing the involvement of local actors. Most of the established water user associations, however, were only formally created. In practice, they were neither functioning nor familiar to the farmers in the respective villages. Regardless of these formal efforts, little collective action in the irrigation sector has been observed in Bulgarian villages. Present formal attempts seem to find no common ground where collective action can grow.

Instead, ongoing deteriorating of the facilities is observed, and only a small percentage of the fields equipped with irrigation devices is actually irrigated. Chaotic water appropriation rules and insecure and ineffective property rights prevail (Penov et al. 2003).

Irrigation water and irrigation infrastructure are common-pool resources. Recently, common-pool resource scholars call to take distributional aspects and power relations into account

when analyzing institutional change in common-pool resource management (Meinzen-Dick et al. 2002: 652; Agrawal 2001: 1650-1656). The way benefits are distributed among various actors is decisive and the respective political weight of the latter can influence the likelihood of institutional change (Baland and Platteau 1998: 649). When social dilemmas are solved and new rules implemented, some people benefit more than others. Indeed, some may even benefit at the expense of others. Empirical evidence from Bulgaria supports that local actors use power asymmetries to maintain and strengthen their opportunistic strategies.

In this paper, I will first present the analytical approach introducing a central self-reinforcing process between opportunistic behavior and distorting social capital. Both features are understood as transition-specific determinants constraining collective action.

Thereafter, I will introduce from Transition Economics derived relationship between the incongruity of rules and opportunistic behavior in a central-eastern European transition country. Empirical cases of incongruity between formal and informal rules in Bulgaria's irrigation sector clearly show underlying opportunistic behavior and power abuse strategies. I will continue with outlining various transactions in the irrigation sector, in particular, the foundation of a water user association, and related decisions affected by power abuse. In addition, I will present empirical evidence for deteriorating social capital in terms of distrust in formal actors and perception of corruption. This draws back to the frequently stated positive correlation between cooperation and trust towards strangers and beliefs about the fairness and helpfulness of others, as underlined by Gächter et al. (2004: 523).

2 Methodology

The study is based on six months of empirical fieldwork subdivided into three phases spanning two and a half years from 2000 until 2002. In addition to interviews with experts in Sofia and with representatives of the regional administration, two kinds of case studies were conducted: 1) In the first research phase, 17 village case studies provided an overview of the irrigation situation in the villages and allowed for a rough analysis of the main hypotheses. 2) In the two following research phases, four in-depth village case studies were carried out. Two irrigation command areas were selected. In each area, two villages were chosen with one village located directly behind the water dam (top-ender) and the other further back – at the middle or tail-end of the canal and river system. In order to guarantee the anonymity of the individuals involved, abstracted abbreviations of the villages were set up, for example, Village A for the top-end village in the first command area.

¹ Department of Resource Economics, Institute of Agricultural Economics and Social Sciences, Humboldt University of Berlin, Germany, insa.theesfeld@agrar.hu-berlin.de

With the help of explorative and qualitative methods in the first two research phases, I analyzed the institutional change in Bulgaria's irrigation sector. Among other aspects, the rules-in-use which govern the daily practices of irrigation were investigated and examples given. In the third research phase, more standardized quantitative methods were conducted to elucidate selected relationships.

3 Self-reinforcing Constraints for Collective Action

The institutional analysis shows that there are transition-specific features that hinder the emergence of collective action in the irrigation sector. The broader theoretical approach underlying this research shows the variables influencing collective action solutions for an irrigation sector in transition and the chief interdependencies among these variables. They are grouped into the dimensions: formal political settings, effective institutional settings, characteristics of the resource and infrastructure settings and of the transactions, and characteristics of actor groups and their interactions. Figure 1 emphasizes the relations to transition-specific features namely, the incongruity of formal and informal rules, information asymmetry, opportunistic behavior and deteriorating social capital.

The incongruity of formal and informal rules and information asymmetry are typical for a transition economy and facilitate a milieu in which opportunistic behavior can persist. Opportunistic behavior, or power abuse, leads to deteriorating social capital. The interdependencies between power abuse and low social capital represent a cycle of self-reinforcing processes that constrain collective action. The combination of variables relevant for an individual actor modifies her/his decision in favor of or against new institutional rules, discussed here as a collective action solutions (Theesfeld 2004: 256).

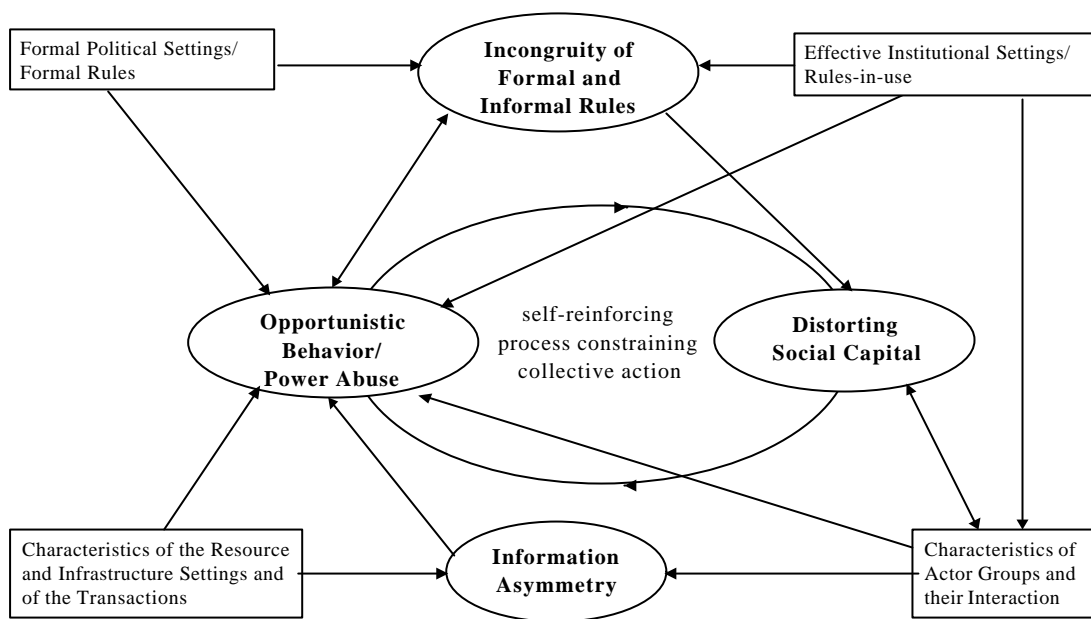


Figure 1: Variables Influencing Collective Action for an Irrigation Sector in Transition

4 Incongruity of Rules and Power Abuse

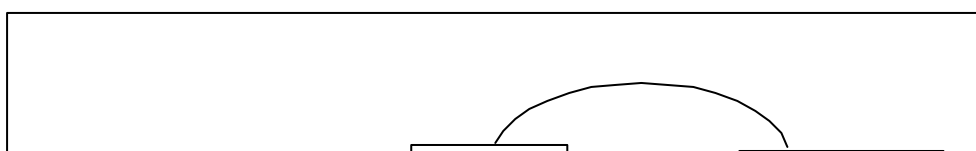
In transition countries, a large discrepancy can be observed between formal political intentions and informal effective institutional change at the local level. The simultaneous change from a centrally planned to a market-oriented economy and from a communist-determined to a democratic political system created an *institutional vacuum*. This was the result of numerous economic, political, and institutional constraints, such as the unpredicted fall in output, unsuccessful attempts to stabilize the economy, limited law enforcement mechanisms, limited implementation capacities of formal rules, and weak public administration capacities (Roland 2000; Nenovsky and Koleva 2002: 49). Chavdarova (2002: 68) contradicts the argument of mainstream economists. She argues that informal institutions fill up the formal institutional vacuum. In fact, informal institutions form the core of present Bulgarian society. Compared to other eastern European transition countries, in which formal institutions provide more orientation for their people, the Bulgarian state could not provide a vision for its people and, to a large extent, formal actors lost their reputation and trustworthiness (Theesfeld 2005; Dobrinsky 2000).

Korf (2004) also refers to the gap between formal and informal rules but, according to his focus on civil wars, he develops a more differentiated view. Korf starts from the definition that rules are constantly made and remade through people's practices. Formal institutions may be "re-interpreted, renegotiated and repracticed in the local action arenas" (Korf 2004: 172).

Korf (2004: 171) thus develops the concept of hybrid institutions, among other aspects, expressing that a pure distinction between formal and informal institutions in the practice of social interaction would be artificial. There are multiple and contesting rules for governing. This hybridity of rules and structures may also hold true for Bulgaria's transition period, characterized by the coexistence of multiple and incongruent formal and informal rules.

The incompatibility of formal rules and every day practices creates a no-man's-land, which builds the groundwork for illegitimate redistribution of power and wealth (Chavdarova 2002: 72). The high incongruity between formal and effective rules provides conditions under which opportunistic behavior is able to expand and persist. Likewise, the dynamic nature of effective rules and the ambiguity of multiple rules, as described by Korf (2004), bears the risk that rules can become resources manipulated by powerful actors. Opportunistic behavior is defined as different expressions of self-interest seeking with guile, including calculated efforts to mislead, deceive, obfuscate, and otherwise confuse (Williamson 1996: 378). Power abuse is understood here as the individual expression of opportunistic behavior and, thus, almost synonymous with opportunistic behavior. According to Ostrom et al. (1994: 37-50), an institutional analysis relevant to field settings requires the understanding of the effective rules, or rules-in-use, used by individuals. All rules are the result of implicit or explicit efforts to achieve order and predictability among humans. Rules-in-use govern the patterns of interaction among the different actors in the system and represent the set of rules to which participants would refer if asked to explain or justify their actions to fellow participants. The rules-in-use and opportunistic strategies develop and change interdependently. On the one hand, effective local rules provide a basis for opportunistic strategies. On the other hand, because of opportunistic strategies certain rules-in-use are manifested, so that those effective rules reflect previously existing opportunistic strategies. This dynamic process is shown in Figure 2 and can be detailed as follows:

- Rules-in-use pave the way for opportunistic strategies. The opportunistic strategies, in turn, change the rule-in-use, and the incongruity between formal and effective rules increases. Owing to higher incongruity, possibilities for opportunistic strategies increase even more.
- Opportunistic strategies appear and, in response, a certain rule-in-use develops. This effective rule is not congruent with the formal rule. The incongruity increases, and the possibilities for opportunistic strategies increase again.
- In the long run, growing incongruity produces a feedback that influences the development of the formal rules.



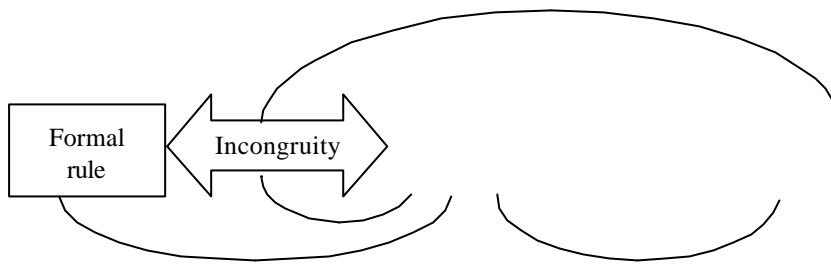


Figure 2: Interdependent Development of Rules

This incongruity between formal and rules-in-use also applies to Bulgaria's irrigation sector. Together with information asymmetry this incongruity paves the ground on which opportunistic behavior and power abuse can grow.

4.1 Incongruity of Formal and Effective Rules in the Irrigation Sector

In this section, the incongruity of formal and effective rules for one tail-end village is analyzed with the help of empirical material. The examples are taken from a village investigated within the frame of the empirical study. Similar signs of incongruity were observed in all case study villages. The examples can therefore be regarded as typical ones. As will be shown, limited sanctioning and enforcement mechanisms as well as practically non-existent monitoring mechanisms provide favorable conditions for opportunistic behavior. This opportunistic behavior is observable for both the actual water appropriation practice and the for maintenance work.

4.1.1 Water Ordering and Appropriation Rules

Water users have to put in an advance order with the water guard if they want to irrigate. The formal rule stipulates that the guard **must** collect a certain amount of orders before he can open the barrage and fill the canal with water. Nevertheless, compliance with this rule varies. Informally, no farmer can rely on irrigation water via canal, even if he orders it.

Another issue is that usage rights to the canal system and the water dam belong to different people. The dams are often rented to private individuals who farm fish in the reservoir behind the dam. Formally, the stock of fish should not reach a level that would initiate a competition for water between irrigation and fish farming. Normally, farmers in the respective village want to irrigate and order water, but the tenant of the water dam does not divert water into either the canal or the river. Based on this situation, the informal rule appears to be: when the canal is filled, irrigate to be on the safe side, whether or not you have ordered water. The water guard tries to collect the fees afterwards. The *first* formal rule - a farmer who orders water and pays in advance has the right to irrigate - does not work in practice.

If water is scarce and farmers, despite their orders, do not receive water via canal, some may join forces and engage in a so-called rebellion: a group of them goes to the barrage and opens it. This generally leads to fights.

In addition, the Irrigation System Company state firm (ISC) regional branch offers verbal advice to the water guards in ranking the crops for irrigation. For instance, only the pickles should be irrigated from 5 p.m. until 8 p.m.. During the day, priority should be given to eggplants, tomatoes, and peppers. Corn ranks third as it needs a lot of water. It should mainly be irrigated late at night. Most cases of irrigation practice do not reflect these regulations. A statement taken from an interview summarizes the *second* rule-in-use regulating the irrigation sequence: “Whoever is ahead of you at the canal is the first to irrigate. That is the law.” This is a common situation; farmers who extract water from the head of an irrigation system can obtain more water than those located at the tail-end (Ostrom 1990). Most of the interviewees described the situation as chaotic. The problems of water allocation among neighboring villages are the same as those of small-scale water users sharing one canal. A typical situation involves a tail-ender ordering water. When the canal is filled, everyone ahead of him irrigates, and the tail-ender faces water shortage, even though he ordered the water and may have even already paid for it.

The *third* rule of irrigation from one canal is specified by physical power. Physical violence among the users of an irrigation system is symptomatic of inadequate assignment of spatial or temporal irrigation slots to appropriators.

4.1.2 *Monitoring Rules*

There is almost no monitoring system for water appropriation. This situation leads to farmers guarding their fields around the clock. First, farmers wait for the water in the canal to reach their plot so that they can immediately start irrigating before another farmer begins. Second, they must supervise while irrigating, otherwise another farmer diverting water from a top-end position can start irrigating, leaving them insufficient water to complete their irrigation turn.

Water storage basins are filled overnight to secure the availability of water in all villages belonging to one irrigation command area. If water flows into the canal system at night, it immediately motivates farmers to irrigate at night too, often in an attempt to avoid payment. Such illegal irrigation is usually discovered by daylight, but farmers simply claim that neighboring farmers flooded their fields, which cannot be proven to the contrary.

4.1.3 *Excludability and Sanctioning Rules*

Water users who have not paid the water fee cannot technically be excluded from water diversion from a canal. There is no graduated and credible sanction mechanism, as is

described by Ostrom (1990, 1992) in the design principles for enduring, self-governing, common-pool resource institutions. Formal sanctioning power is generally lacking. For instance, the one water guard that worked in the village during the irrigation season 2000 and 2001 carried no authority, nonetheless he made use of social sanctioning measures to force people to pay the water fees; he shouts in front of their houses - loud enough for the neighbors to hear - as a way of embarrassing the water users into paying.

Another event serves as illustration. During the summer of 2002, a group of irrigators refused to pay in advance. Consequently, the water guard stopped the water flow into the distribution canal. A group of farmers then went to the barrage, where the water is distributed between the river and the distribution canal, and opened it on their own. During this violation, they broke the mechanism of the barrage. Technicians were needed to repair it. Although the ISC caught some of the violators, they were not sanctioned, much to the regret of the water guard.

4.1.4 Operation and Maintenance Rules

Maintenance practices are largely affected by the ambiguity of ownership rights to the irrigation infrastructure and insecurity regarding responsibilities. Problems resulting from the transformation of the irrigation infrastructure are ambiguous property rights on the medium-scale infrastructure, including mid-sized canals, pump stations, and microdams. Maintenance duties are not clearly assigned among the various entities, such as successor agricultural cooperatives, municipalities, the ISC, water user associations (WUAs), and water users. No distinct formal rules for operation and maintenance work have been laid down. The maintenance guidelines for WUAs are particularly fuzzy, even though they form the basis for granting the use rights to the infrastructure. These guidelines are not followed, however, and neither the ISC nor the water users control the maintenance work done by a WUA management. Accordingly, there is a discrepancy between the need for maintenance to secure long-term system operation and the actual work conducted.

Routine maintenance is generally delayed until the system's complete deterioration. Holes and cracks in the concrete canal linings are not repaired, stolen concrete plates are not restored, and broken devices to regulate the water flow are very rarely replaced. Additional water outlets are largely missing, and their installment is not planned. They would help serve the growing number of individual water users that result from an increasingly scattered crop production structure. Maintenance work is dominated by 1) urgent and temporary repairs carried out provisionally and 2) freeing the canals from dirt, trash, weeds, and brushwood for the upcoming season only.

Further explanations of farmer reluctance to take on responsibilities and maintenance duties include prevailing free rider behavior and the mental model of superordinate authorities as responsible. The ISC regional branch occasionally cleans the canals to be able to serve its clients. Likewise, several of the WUAs conducted minimal shortsighted maintenance work to justify their collection of water fees.

The following observation was made regarding the few cases in which water users cleaned the canals. Only a minor share of those who promised to participate actually did. Instead of working as a cooperating group and cleaning the whole canal, they cleaned on their own in front of their own plots (Figure 3). Furthermore, upon closer examination, it is striking that most of them started to clean the canal at the beginning of their plot, but only as far as the water outlet serves it. The outlets are usually located at the center of the plots and in most cases consist of illegal holes in the concrete linings. The remaining canal line of the farmer's plot was left untouched, overgrown with weeds and brushwood. Once the farmer cleaned the canal up to the outlet, he had no private benefit to clean further, even though this would serve the collective benefit. This observation indicates not only the individualistic behavior of those who participated and their lack of ability and willingness to cooperate but also the free riding behavior of those who did not participate.

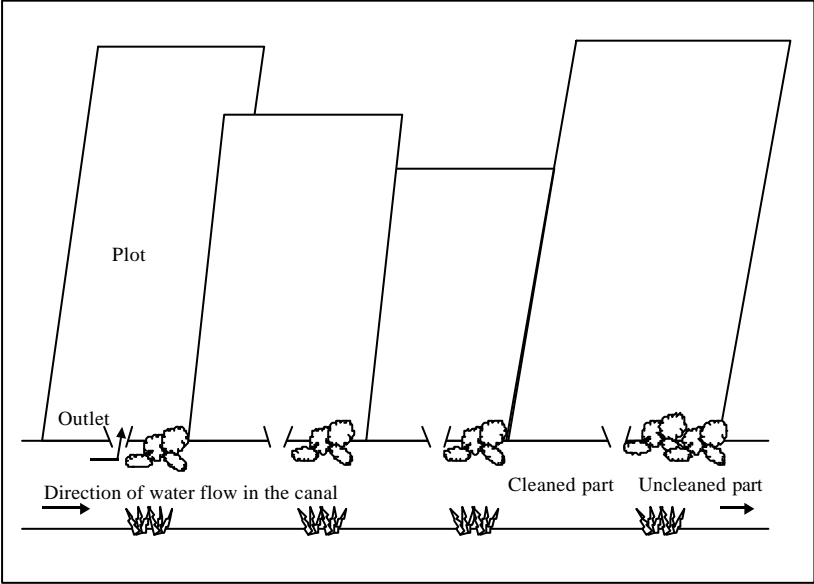


Figure 3: Predominant Canal Cleaning Behavior of Water Users

4.2 Power Abuse in the Irrigation Sector

Different ways in which actors exercise power, are conceptualized as power abuse, i.e. to intentionally exercise power to pursue private benefits. Hence, power abuse is the individual expression of the opportunistic behavior of different actors. The aforementioned examples of

actual water appropriation practice and maintenance work indicate that incongruity of formal and effective rules facilitates and, in turn, is a result of power abuse in the irrigation sector. Table 1 summarizes examples of transactions in the irrigation sector that are affected by power abuse.

Table 1: Transactions in the Irrigation Sector Affected by Power Abuse

Transactions in the irrigation sector	Actors involved actor I actor II		Specific decisions affected by power abuse
Renting in plots from the cooperative	Water users	cooperative	Who gets plots at top-end position along the canal?
Starting an irrigation turn	Water users users at the canal	neighboring water	Who irrigates first, and who violates the water appropriation rules?
Paying for irrigation water	Minor water users Major water users	water guard ISC regional office	Who refrains from paying, or who pays less?
Releasing water into the canal	Water users Water users	water guard ISC regional office	When, i.e. favoring whom, the water is released?
Closing the barrage of a microdam	Fish farmers	water users	For how long is water not released into the irrigation canal?
Providing uncleaned irrigation canals to the water users	ISC WUA	water users water users	How can maintenance work be reduced to a minimum?
Establishing a constituent committee to found a WUA	Initiators	water users	Who is involved in the initiative, and how are operational rules set?
Withholding necessary documents needed to transfer water dam use rights to a WUA	ISC	constituent committee	When should the necessary documents be provided, and how can the procedure be prolonged?
Founding a WUA	Management of WUA users	water	Who is in the management, and how can certain water users be excluded?

Note: This refers to the definition of transactions by Furubotn and Richer (2000) who do not restrict the term to situations in which resources are actually transferred in the physical sense of delivery: “A transaction describes: (a) a technological procedure, as the transfer of a good across a technologically separable interface, or (b) the transfer of property rights.” Besides economic transactions, Furubotn and Richter (2000) also talk about social transactions, which are actions necessary to establish, maintain, or change social relationships. Social transactions are necessary for the formation and maintenance of the institutional framework in which economic activities occur. In the table above, transactions are also formulated with reference to Hagedorn et al. (2002: 4-6) who gives an example of “leaching of nitrates into the groundwater on sandy soils” as a transaction related to nature between the farmer and the public or community concerned.

Based on these definitions, renting in a plot from a cooperative refers to a transfer of property rights. Likewise, with the formal recognition of a founded WUA or of a Constituent Committee for a WUA, certain property rights are transferred to the respective actors, such as the right to decide on the territory to be served and,

therewith, which clients to exclude. Finally, one party's withholding of documents that are needed by another is a social transaction, hindering the formation of a new institutional framework.

The following section elaborates a bit more on the example of founding a WUA and the questions who is in the management and how can certain water users be excluded (last example in the Table 1).

In 2000, in one case study village, nonvillagers founded a WUA according to the Cooperative Law. The only precondition was that the founders had to be landowners of plots located alongside the main distribution canal, which serves a number of villages. This foundation was inscrutable for the population of the respective village. For instance, the head of this association refused to name the other six founders and members. Most of the villagers were unaware of the possibility of establishing a WUA. Likewise, they did not know about the formal existence of a WUA in their village. The villagers spoke of this organization either as a private water firm or as a tenant renting the canal system. The villagers were only aware that the water guard was from their village, without knowing the other parties involved. The water guard was the father of the head of the association. Since there was at least one connection to one of the villagers, an uncertainty and uneasiness in discussing this topic was evident during the study. Villagers knew hardly anything about the formal existence of that WUA. Thus, the situation resembled one of open access, with efforts by a formal institution to exert some authority. The effective water ordering and appropriation rules in the village show that the WUA was not an effective company. During spring of 2001, the water guard employed five pensioners for five days to clean the canals, which was the only maintenance work in the season completed by the WUA.

The head of the WUA took advantage of the information asymmetry that existed between him and the villagers. He held a leadership position in the Youth Organization of the Peasant Party, which held governmental power in coalition with the Union of Democratic Forces (UDF) from 1997 until 2001. The UDF aimed to increase their political influence in the rural areas by supporting political adherents to found WUAs in rural areas. Due to his political engagement, the manager of the WUA had access to various kinds of information and could participate in a course offered by the World Bank, in which he was trained in establishing WUAs under the Cooperative Law. He used his powerful position, good contacts, and supplement knowledge to establish the WUA. The prestige he had earned by establishing a WUA furthered him in his career in politics. He gained extra income for the collection of water fees and made an additional profit by not spending adequate funds for maintenance work.

It became evident that, the mere implementation of new formal rules - such as the rules under the Cooperative Law to found a WUA - without respecting local power structures, may again lead to an abuse of power by those individuals possessing already advantageous positions.

Certain characteristics of irrigation transactions, which also reflect the resource characteristics and infrastructure settings, can support the power abuse strategies of individual actors. Power abuse is conceived as a transition-specific feature that has a strong and direct impact on the individual actor's decision in favor of or against collective action. Furthermore, it has a negative impact on social capital development, which would facilitate collective action. The abuse of power resources affects the choice of governance structures in the irrigation sector (Theesfeld 2004).

5 Deteriorating Social Capital

A characteristic of actor groups fostering collective action solutions is that most appropriators must share generalized norms of reciprocity and trust that can be used as initial social capital. Property rights scholars often underestimate the role of initial social capital. In lowering the cost of working together, social capital in turn facilitates cooperation (Putnam 1993; Pretty and Ward 2001; Baland and Plateau 1998). Collective action needs credible commitment, and one decisive requirement for credible commitment is trust among actors. When a society is pervaded by distrust, cooperative arrangements are unlikely to emerge. Transition economists argue that experiences from socialist times and the transition process have resulted in low and deteriorating social capital and specific actor characteristics that constrain the opportunities of collective action and the provision of public goods (Danchev 2005; Gächter et al. 2004; Paldam and Svendsen 2000; Rose-Ackerman 2001). The argumentation highlights the importance of complementing collective action theory with transition-specific characteristics. This section gives selected evidence for distrust and the perception of corruption, which hamper credible commitment.

The following empirical results draw on Paldam's (2000) classification of social capital into:

- trust, divided into a) generalized trust and b) special trust - such as trust in the law enforcement system, trust in the political and administrative system, and local trust;
- co-operative ability, which refers to people's ability to work together; and
- the density of voluntary networks.

5.1 Distrust in Formal Actors

In this section, the first aspect of Paldam's classification—trust—is seen as the core element of social capital. Hence, standardized questions were included in the questionnaires used in the third phase of field research to assess *special trust* in formal actors, as one indication for

social capital. One question was: *Whom do you trust?* A list of organizations was presented, starting with national formal organizations and ending with local authorities.

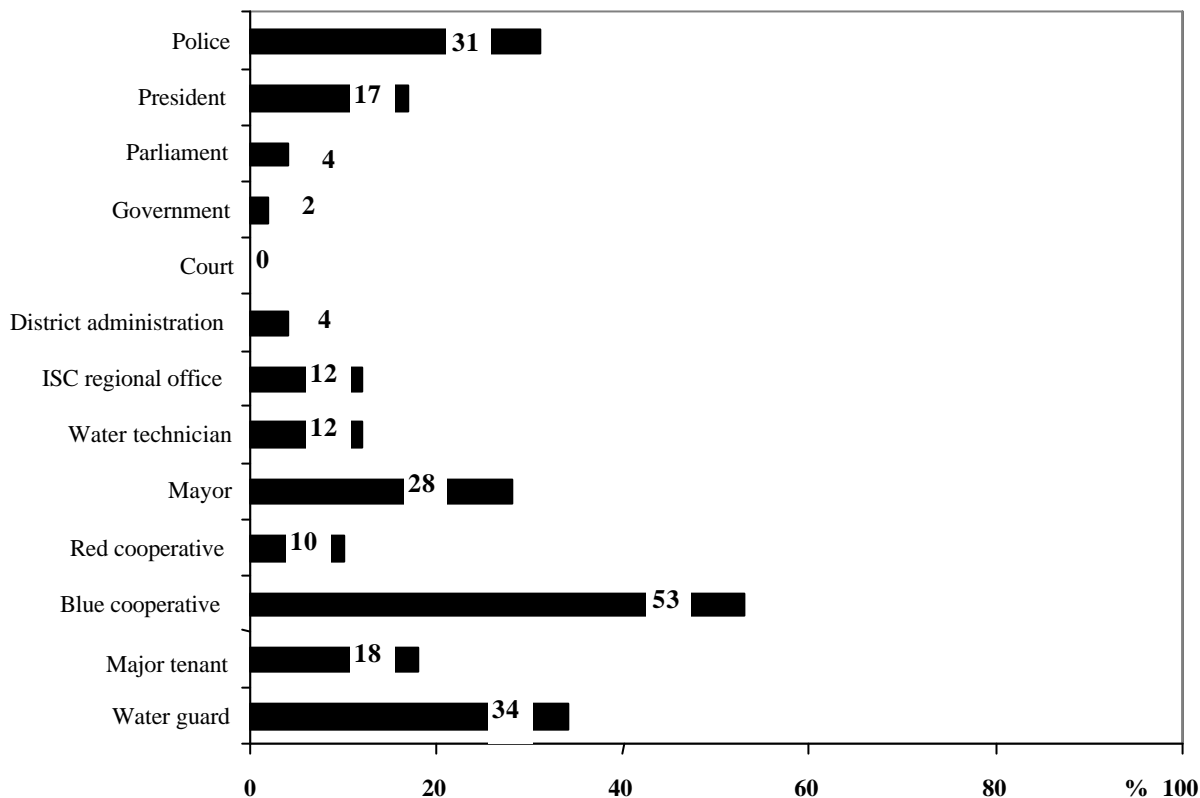


Figure 4: Share of Local People with Trust in Formal Actors

5.2 Perception of Corruption

Another question was: *In your opinion, how many members of the following organizations are corrupt?* The scale ranged from ‘none,’ ‘a few,’ ‘many,’ ‘the majority,’ to ‘everyone,’ and ‘I do not know, or no answer.’ The same list of formal organizations and authorities was presented. The all-village distribution of relative frequencies of a sample of 42 interviewees revealed that the majority of members of the parliament, and especially of court members, are considered corrupt. With regard to the corruption of individual local authorities, 26% identified the mayor, 33% the water guard, and 43% the red cooperative manager as corrupt. Processing from the analysis of individual local authorities, for instance, the assessment can be specified for the water guard among the four single-village distributions and the all-village distribution, as shown in Figure 5.

With the corruption assessment of the water guard, a major difference becomes noticeable between the all-village distribution and the four single-village distributions. One focus of this study is to understand and explain the variances between the villages. The differences among the four single-village distributions of relative frequencies are explained according to the heterogeneity of local communities. In Village A, the water guard is known for accepting side-payments, which is reflected by the survey result of 60% of interviewees assessing him as corrupt. On the contrary, the figure shows, that nobody perceived the Village C water guard as corrupt. He is a poor Russian immigrant and not in a powerful position to ask for bribe money. This shows that at the local level, survey data may vary a lot depending on the individual case. Another consideration shall be added at this stage. The fact that an interviewee is not sure whether a formal actor is corrupt implies that this actor can hardly be trusted.

An interesting aspect for the analysis of social capital is the correlation between considering someone corrupt and not trusting him, as also shown in Figure 5. Paldam explains this correlation (2001: 3) as follows: “When people do not trust institutions, it is for good reasons. The best existing proxy for low trust I have been able to find is corruption.” This reemphasizes why corruption is considered in an investigation on social capital of local actors. The Village A water guard is the least trusted compared to the other villages’ water guards and is considered most corrupt. The Village C water guard, on the other hand, is the most trusted; none of the interviewees perceives him as corrupt. Although there are variances among the four single-village distributions, the maximum share of 50% of local people with trust in the water guard is low. As described above, the water guards are the people who best understand the system, and most of them have long-term experience. Their involvement in collective action solutions for the irrigation management is crucial but constrained, as they do not enjoy the confidence of local citizens.

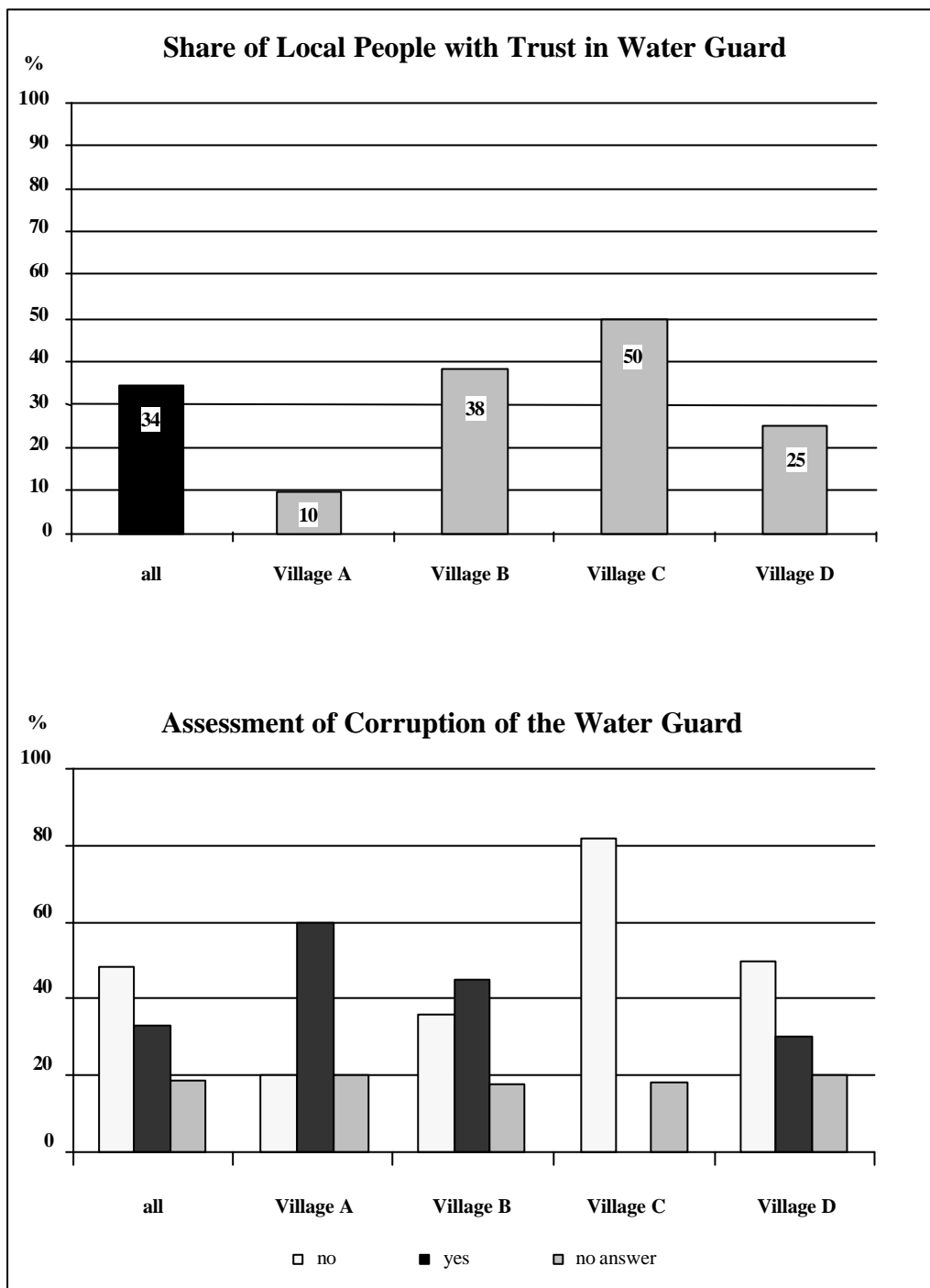


Figure 5: Correlation between Trust and Corruption

6 Conclusions

Pistor (2002: 73) discussed “legal transplants” in transition countries, stating that the incongruity of formal and informal rules, which are described at length in this study for Bulgaria’s irrigation sector, are a consequence of the laws imported into transition countries. The transplantation is due to a belief in the transferability of another country’s more developed practices. Pistor concludes that the observed weak law enforcement in transition

countries is not due to inadequate institutions but to a missing demand for legal rules and institutions that enforce them. She (2002: 75) announces three premises for effective legal transplants: First, formal legal systems and imposed organizational forms and institutions that should be effective must respond to and foster demand. Every formal legal system relies heavily on voluntary compliance, because the state-controlled resources are insufficient to ensure legal compliance by means of coercion only. Second, there must be an alignment of formal norms with underlying social norms and beliefs. Third, the law or institution must, in particular, provide solutions for actual conflicts and take into account the various interests of actors behind the conflict; otherwise, the formal institution will be ignored.

Pistor's description of legal transplants can be applied to Bulgaria's *institutional transplant*, i.e. the water user associations. Disseminating organizational blueprints for WUAs throughout the world is generally inadequate to change people's incentives and behaviors. State officials frequently design the basic structure of the farmer organization that is formally accepted. This design is conceived as a predetermined blueprint for farmers' self-organization. Central authorities often direct the creation of farmer organizations without considering farmers' incentives and capabilities (Tang 1992: 8). Chambers (1988: 90), for instance, concludes that farmers cannot be organized through persuasion or fiat but will only participate if they perceive an advantage. In particular, the success of transferring these blueprints to transition countries in central-eastern Europe to facilitate rehabilitation of deteriorated irrigation systems is questionable. Transition societies experienced over 40 years of socialist systems, which distinctly shaped their mental models and action patterns, as exemplified in their low level of trust in formal actors.

Empirical material proves that the attempts of the World Bank and Bulgarian government to establish WUAs has not been effective up to now at the local level in terms of local self-governing. One reason is that the heterogeneity of actors interests and their different endowment with power resources has been disregarded. People may ignore, oppose or take advantage for private benefits of these institutional transplants. First, if people are skeptical of the imposed formal structures, voluntary compliance will be missing. People will continue to ignore the introduced institutions, i.e. the WUAs, and find other solutions to their problems. Reliable legal and administrative conditions have to be provided to allow grassroots organizations to evolve freely according to farmers' needs.

Second, with every new rule, the distribution of benefits and duties among various actors changes. Distributional aspects and power relations have to be taken into account as actors in the fear of losing their favorable powerful positions will oppose the new rule (Dobrinsky 2000: 598). Blomquist et al. (2005: 9) support the argument that extreme asymmetries in

resource endowments among actors can imperil decentralization success, as those which fear to be worse off after the alteration may oppose it. But, this general statement has to be qualified in one respect. Some inequality of resource endowments is necessary to facilitate initiatives by enabling some actors to bear the costs of taking a leadership role. Those with greater endowments are willing to bear a disproportionate share of the initial costs of organizing institutional arrangements in order to stimulate movement.

Third, new formal rules may be implemented without proper spread of information. This information asymmetry may even allow to maintain and strengthen power abuse strategies by individuals and, thus, counteracts the envisaged formal aim of equal distribution of benefits. This in turn, further reduces the level of social capital which is anyway low, contributing to its further deterioration, otherwise a prerequisite for collective action.

Instead of a predetermined blueprint, specific policy measures could have a major impact. Such policy measures should address main obstacles that hamper collective action, particularly the transition-specific features. To limit the prospects for opportunism and reduce information asymmetry, governance structures should increase the extent of common knowledge and facilitate information exchange. Measures have to be developed to start positive successful examples of grassroots organizations – not only in the irrigation system management, but also in agricultural production. Successful models of postsocialist cooperation are needed to build reciprocity and trust relationships.

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