

2.6 The links between downstream and upstream (W.Z & WAR):

In Wadi Zabid, the project to improve the irrigation structure in the 1970s changed the control and flow of water in the valley resulting in what many feel is a disruption of the traditional water rights. While there is a general understanding that the current situation harbors potential difficulties, the changes people are experiencing are perceived differently. On the one hand there is the view that the problem is related to the climate and beyond the control of the individual farmers, and on the other hand there is the view that some form of control is needed to stop people from violating the system and their rights.

2.6.1 Background:

The Tihama, also known as Yemen's breadbasket, was targeted as an area which through improvement could help the country with its food security problems. In the early 70s Yemen was seeing large scale labor migration from the agricultural sector to Saudi Arabia, and the production of food domestically was not keeping up with population growth (Cohen and Lewis, 1979).

In 1969 the FAO decided that the best way to improve agricultural production was by improving the irrigation system in the area. A study of Wadi Zabid concluded that the best way forward was to build ten diversion dams along the valley which would lead the water into the existing canals, as well as structures within the system to facilitate the control and distribution of water (Tipton and Kalambach, Inc. 1974, 1). This was the first part of the Tihama Development Project which in all includes five similar projects in different wadis in the Tihama.

Another study by Tipton and Kalambach (1974) stressed that the current system for water distribution was inefficient and inequitable and proposed a change in the water allocation. It was recommended that no land was to be deprived of water to the extent that it could not maintain the same production level as it had had before (Tipton and Kalambach Inc. 1974, 15).

2.6.2 Water rights and water distribution rules:

The management of surface water in Yemen has a long tradition and involves a well established system of rules (see for example Varisco 1983; Lichtenthäler 2000; Cohen, 1979, 524). There is a general rule *Al-a'la fi-l-a'la* giving upper riparian dwellers the primary right to abstract water according to their need. When they have taken what is needed they let the water pass to lower riparian dwellers (Lichtenthäler 2000, 145).

Approximately 660 years ago a sheikh in the area, Ismail Al-Gabarti modified the rule by dividing the area into three, and allocating three different times of the year when each area could irrigate. The upper part of the wadi was allowed to irrigate outside of the flood-season (October 6th – March 15th) as they would have been traditionally. In addition to this, the flood season (March 16th – October 5th) was divided into three: giving the upper part of the wadi 97 days of water, the middle part 40 days and the lower part 35 days (Bahamish 2004, 8). This practice is according to Tipton and Kalambach not uncommon and water conflicts were often solved by those living upstream conceding water amounts or a time allocation of water to the lower riparian dwellers (1974, 12). Interestingly, there is also a provision in the Al-Gabarti rule to allow the remaining five days of the flood period to continue to people further downstream. This could indicate that the idea of taking into consideration a place such as Al-Mujalis which is not part of the three groups, might fit with traditional practices.

Before the project, the farmers in the wadi would collect the flood water by building a temporary dikes or diversion structures across the wadi. These would then lead the water into the desired canal of the farmer and from there water could be diverted to the fields (Tipton and Kalambach, Inc. 1974, 4). These structures were made of earth and would after a while give way to the pressure of the water. This, in combination with the allocation system explained below, was seen as problematic in the study carried out as it could result in a dike breaking and the farmer losing his share of the water (Tipton and Kalambach, Inc. 1974). There is however another side to this as one of the respondents pointed out. He said that while the new weirs required less labor, they also remained intact instead of breaking and providing those downstream with access to the flood water.

In the study carried out in 1973, the very limited time groups 1 and 2 had benefit of the water, in addition to the physical features of the valley and the uncertainty of water amount and occurrence the system was seen as not equitable (Tipton and Kalambach Inc. 1974). In their study they argued that the relative water needs of the different groups meant that while group 2 never received the required amount, group 1 and 3 received more than they required (Tipton and Kalambach Inc. 1974, 14).

2.6.4 Changes in traditional water rights:

In general there seems to be consensus that the weirs have disrupted the flow of the water. As one respondent said, now 70% of the flood water goes into areas that were originally dry and could not be reached before. Previously the main crops in Wadi Zabid were sorghum and millet (Tipton and Kalambach, Inc. 1974, 3). Now however, all of the farmers questioned in Wadi Zabid said that banana was a main crop. The bananas are extremely profitable but require a lot of water. This brings us to

one of the solutions mentioned by several, which was that one should ensure that people only irrigated their crops once.

The absolute majority of people who claimed to be satisfied with the current system saw more rain as the solution to the wadi's water problems. Those who were unsatisfied on the other hand stressed the need for government control, limited irrigation upstream and education of consequences of upstream abstraction.

While some saw the weirs as disrupting the whole system of distribution, others saw it as a violation of their right. In both Wadi Zabid as well as Wadi Rima', those who were unsatisfied or recognized that there was dissatisfaction with the current water distribution, often saw 'control' as a solution to the problem. When asked about the changes in water rights, the majority of the respondents mentioned the Al-Gabarti ruling or *Al-a'la fi-l-a'la*, or both as the current system. It was stressed by most that there was no change in the system per se, but rather that the system was being violated. The majority claimed they were satisfied with the current system, and while it was recognized that not everyone was satisfied, several respondents raised concern of what would happen without the system.

The reality of potential violent conflict was described during an informal interview with an inhabitant of Wadi Zabid. He told us that two families had taken up arms against each other in the wadi, over access to water. There were several casualties and the conflict had escalated. The local sheikh who could be expected to take on a mediating role was himself involved in the conflict. This was a recurring impression about the role of sheikhs from our respondents; that they first and foremost sought to look after their own interests.

There was no great satisfaction with the sheikhs in Wadi Zabid, The same was true in Wadi Rima' where the role of sheikhs and other "effective people" were mentioned as problematic. One respondent informed us that because the sheikh of his area was put in charge of a drinking well from a project. The result was according to the respondent unfair distribution of water and it ended in the closure of the well. There were however a few respondents who mentioned the sheikhs' role as satisfactory and one respondent pointed out that the WUAs in the region had the function of curbing the power of the sheikhs.

While close to all of the respondents in Wadi Zabid said that there was no cooperation between them and people downstream, there was some understanding of the problem. Several mentioned that while they were satisfied they were aware that not everyone was and one respondent pointed

out that the system they were following (the Al-Gabarti ruling) was probably made for irrigation of different crops than bananas.

While close to every one of the people asked in Wadi Zabid said that WUAs were active in the region, opinions about their effectiveness varied. There is a general sense that institutions are lacking in the area. Several people in Wadi Rima' pointed to the lack of public services like schools and hospitals, and in answer to questions about institutions in the area the most common reply was that they did not exist. Overall there seems to be a sense of neglect. However, there were several institutions that were mentioned as active in the area in response to other questions, and therefore it seems that the term "institution" is understood as more of an outside body and not the local WUAs. Also making it clear that the WUAs are not perceived to do any of the work expected by institutions.

The local council was almost without exception said to have no effect in the area. Many bemoaned this and there seemed to be dissatisfaction with the lacking presence of the council. One respondent claimed that the local council only assisted the big farms, while a farmer in Wadi Rima' said they were absent from the area except when there was an election. On the other hand, four respondents from Wadi Zabid said the local council played a role in solving disputes and following up on projects as well as overseeing the opening of the canal. The local council was not however ever mentioned specifically as a solution to the problems regarding spate water distribution.

The TDA was only mentioned by two respondents as an institution operating in the area. One of them however said that the role of the TDA, which was within maintenance, had become weak due to the presence of WUAs.

In summary there is wide recognition that the weirs have caused a disruption to the water flow and a situation that for some is disadvantageous. The solution however, from the point of view of those who are unsatisfied with the current scenario, lies not with the removal of the weirs, but rather the control of people taking advantage of them.

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