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Livelihoods in the Asqalan
and Sufi-Qarayateem Canal
Irrigation Systems in the
Kunduz River Basin

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Livelihoods in the Asqalan and Sufi-Qarayateem Canal Irrigation Systems in the Kunduz River Basin

Field Report, March -June 2006

Usman Shah

1	Introduction	1
2	Constraints and Difficulties	1
3	Qarayateem Canal	2
3.1	Background	2
3.2	Land Tenure and Agricultural Practices	3
3.3	Water Distribution	4
4	Typologies of Households	7
4.1	Local Categorisation	7
4.2	The Typology	8
4.3	Implications	8
5	Agricultural Labour Relations	9
5.1	Agricultural Labour working for daily wages	9
5.2	Group/Gang Labour	9
5.3	Labourers on monthly wages	9
5.4	Exchange Labour	9
5.5	Family Labour	10
6	Trends Observed in Livelihoods	10
6.1	Reciprocal and Exchange Arrangements	10
6.2	Access to Loans	10
6.3	Market Processes	11
6.4	Coping Strategies	11
6.5	Social Capital and Power Dynamics	11
7	Conclusions and Recommendations	12

1 Introduction

The stated aims of the 'Social Management of Water in Afghanistan (SMWA) Project' that GAA are undertaking, are to engender "sustainable and technical water management capacities" in the Kunduz River Basin of Northern Afghanistan. These aims are all governed by the overarching framework of the wide Kunduz River Basin Programme (KRBP). The project covers intensive study of the existing management systems and fostering the involvement of water users in the planning and organization of water distribution and management systems. The participation of ZEF in the research component of GAA's SMWA project gave me a unique opportunity with which to conduct field research in the context of Afghanistan. The field research I conducted will hopefully feed into the wider body of knowledge arising from the work of the KRBP.

This report is based on empirical data gathered during field work research carried out between March 15th and June 15th. The field research was conducted as part of the research component contributed by Bonn University Centre for Development Research (ZEF) for the SMWA Project implemented by German Agro Action in Kunduz Province, Afghanistan. The research on livelihoods was initially conceptualized as a household based livelihoods analysis using the (UK) Department for International Development (DfID) framework for Sustainable Livelihoods. Accordingly, the first task included contributing to the formulation of a household baseline survey which was later conducted by the community mobilisers working for GAA as part of the SMWA project. However, the final survey undertaken by GAA used villages as the unit of analysis, and this shifted the scope of my research.¹ In addition, interview guidelines for semi-structured interviews were drafted. Several focus group interviews were taken, in addition to participant observation in the field as well as expert interviews with administrators, agronomists, irrigation practitioners, and staff of the GAA. Furthermore, a household survey was designed and carried out in the months of May and June by the researcher.² In total 15 days were spent in the Asqalan irrigation system, whilst 30 days were spent in the Sufi-Qarayateem irrigation system. A further 3 days were spent in the other irrigation systems that GAA will be covering as part of the SMWA project.

2 Constraints and Difficulties

The constraints acting against this research project cannot be understated. Whilst the researcher does not wish to absolve himself responsibility for how the project progressed, the specific facts on the ground in Afghanistan hampered the retrieval of significant data given the time constraints.

Specifically, these constraints related to the security situation in Kunduz, and throughout Afghanistan, which often directly affected where field research could be undertaken. After spending time in both Asqalan and Sufi-Qarayateem, a decision was made, in May, to focus solely on intensive research in the Qarayateem section of the Sufi-Qarayateem irrigation system. The intention was, that a household survey, in conjunction with in-depth interviews, could be conducted in the Qarayateem irrigation system, and that this would be the most useful way of focusing the research, given the time constraints. However, this decision coincided with the deterioration of the security situation in the area. On several occasions, 'incidents' were reported in the area and, given the prevailing security protocols of GAA, it was most often impossible to enter the area to conduct field research. As a result, less than half of the household surveys planned for the Qarayateem area were completed.

¹ In this survey, 'village' was understood to mean a cluster of four mosques with a central Friday mosque.

² See Annex for blank form of household survey.

Perhaps if more time had been available, the security constraints would not have impacted so greatly on the research, however only 3 months were available. Due to the aforementioned reasons, the scope of this research was severely limited.

3 Qarayateem Canal

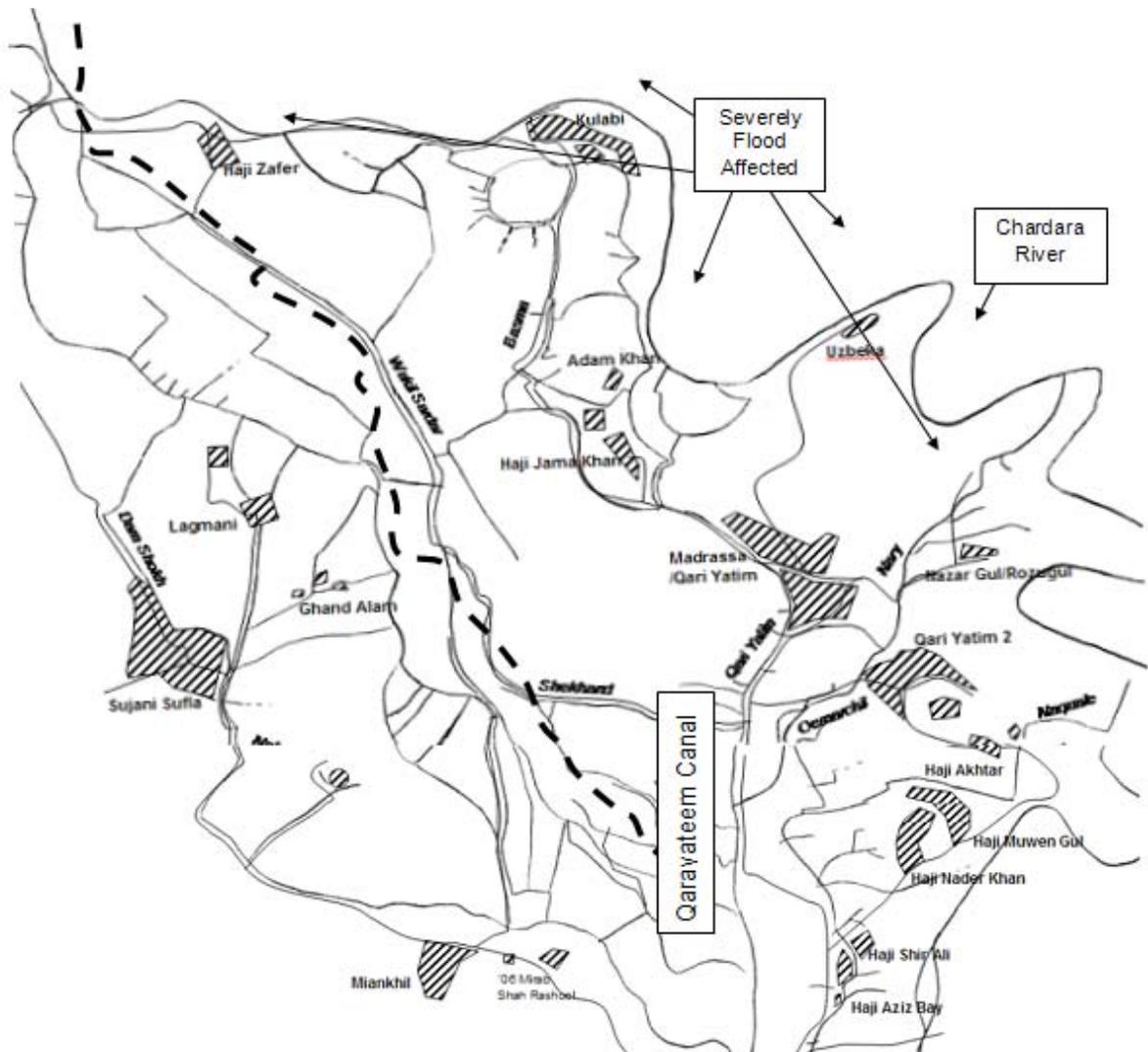
3.1 Background

Qarayateem is a *manteqa*, a loosely defined local term referring to a specific area, in the District of Chardara, which lies directly west-south-west of Kunduz city and occupies an area that follows the contours of the Qarayateem irrigation canal. This canal, part of a larger irrigation system known as the Sufi-Qarayateem Canal which draws water from the Chardara River, a tributary of the Kunduz River, has a command area of roughly 1540 hectares and divides into five sub-canals, all of which drain back into the Chardara River. Qarayateem consists of a series of village clusters and contains 17 mosques.³ There are two main Friday mosques in the area. The largest ethnic group is the Pashtun, which can be further divided into the tribal and clan affiliations. The largest of these is the Umarkhel, which are the most dominant socially and spatially throughout the system. The remaining Pashtun populations are Ahmedzai and Salarzai located in two villages in the tail-end of the canal system. Other ethnic groups present are the Uzbek, located in two villages in the tail-end of the irrigation system, Larkhabi Tajiks present in the village of Madrasa in the middle of the system, and Arabs located in the head of the system.⁴

³ The definition of village is unclear. In this case, a village is designated by the presence of a mosque.

⁴ The Arab in Afghanistan are principally Dari-speaking, originate in the lands north of the Amu Darya that formed part of the Emirate of Bukhara and settled in the north in large numbers after the Soviet Revolution.

Figure 1: Map of Qarayateem Manteqa



Source: ter Steege, B. (2006), SMWA/Wageningen Univ.

3.2 Land Tenure and Agricultural Practices

The population is principally engaged in agriculture and livestock-rearing and the most important crops planted are wheat, rice, melons, pulses and vegetables. Wheat is planted from October through to November, and harvested from May. Rice is raised in nurseries and transplanted into paddies from the end of May through to June. Vegetables are usually grown throughout the year for household use. Melons and mung beans are grown from March through to August. The local penchant for melons means that many farmers expend significant time, money and labour into a crop they have no intention of selling for profit. There is widespread agricultural extensification with trees such as mulberry, poplar and bedrussi planted along the fringes of plots for timber and firewood. Many large landowners are setting up greenhouses with the support of NGOs but these require capital inputs that only a minority of households are endowed with.

In Qarayateem, those who own land tend to farm it themselves. This is because landholdings tend not to be larger than 20 jeribs and the input requirements for cropping the land are untenable. Share-cropping out is conducted by those less well-endowed landowners who lack access to the necessary agricultural inputs, such as tractors, plough-oxen, as well as the means by which to acquire seed, fertilizer and

labour. Sharecropping tends also to occur when people do not have the means or the time to farm their own land because they are now engaged in other income generating activities such as trade, or they are employed in office jobs in the government and non-government sectors. Importantly, there are many households led by females, often war widows, who own their own land and take an active role in agriculture, either by hiring labour for the farming of their land or by sharecropping out. Many of these women now live in other parts of the country or even in other countries and either return to the village or work via a wakil, or agent, to negotiate land use, rent and payments. That said, the most common arrangement for female landowners is for a kinsman to negotiate their cropping and tenancy arrangements.

It is important to note that the lands at the Chardara River's edge were not traditionally captured by agricultural practice, rather they were used for the grazing of livestock and the cultivation of fodder and flax. However, the rapid demographic shift that has occurred as a result of the return of refugees, has placed heightened pressure on the available land resources and increased exposure to flood hazard. Many locals argue that the population of the area has never been as high as it currently is and that this is why the cultivation of flood prone lands on the river's edge has occurred. Other farmers argue that cultivation patterns have changed and aside from the increased pressure on land and water resources, there has been a marked shift from cultivating cotton, as a result of the loss of the Spinzar Mill to the war, to rice as the principle crop. Rice growing areas tend to along the low-lying riverine lands because of the hydraulic requirements of irrigating the crop, but it also requires more irrigation water, which, in conjunction with an already increased population, places more pressure on the resource and increases the risk of conflict.

Tenure security is apparently not a pressing issue in the area. Returnees have been able to reacquire their traditional lands, often through a process mediated by the district government. Land title documents are referred to and confirmed by the District administration, and if people are found to be in illegal occupation of land they are issued with orders to leave immediately by the police. In this way, the tenure security issues that have been issues in other areas (such as Imam Sahib) have been largely avoided.

In the Qarayateem canal area, the landless are concentrated not only in at the head and tail ends, but also in the villages of the dominant Umarkhel clan in the central area of the canal system (refer to Fig 1). In the village of Dubandi, close to where the irrigation system starts, most households are landless Arabs, whilst those in the 'tail-end' village of Uzbekha Sufla are landless Uzbeks. These villages form a significant labour source for the agricultural lands in the system, and agricultural labour is the principal source of income. Based on this, one might draw tentative conclusions regarding the ethnic dimensions of the patterns of land tenure and access in the area. However, the reality is that not only non-Pashtun groups inhabit the vulnerable fringes of the canal system. The landless on the spatial peripheries, are neither the most vulnerable to flooding, nor do they tend to be non-Umarkhel. Whilst the upstream and inland villages in the canal area tend to be Umarkhel, amongst the most heavily floodaffected communities were three Umarkhel villages. Furthermore, the patterns of land tenure reveal that there is a distribution of landless throughout the canal system, not only on the peripheries. There is a high proportion, some 60%, of landless households in the Madrasa-e-Qarayateem area in central Qarayateem.

3.3 Water Distribution

An indigenous system of water resource management continues to be employed despite having all but disappeared during the conflict years. Elders of the Qarayateem canal gather annually and elect candidates to the position of mirab, or water 'lord', based largely on their experience. The mirab spends the year, principally engaged in negotiating for the distribution of water to the farmers in the Qarayateem system as well organizing the maintenance of the canal's physical infrastructure.

As Qarayateem shares an intake with the Sufi canal, the rotation schedules and maintenance works are coordinated. The water distribution decisions are made by late June and the water rotation for Qarayateem begins in June and continues until September. Every year the water distribution system differs according to the water level and people are pragmatic in their agricultural decisions based on the level of precipitation in a year which they use to gauge as the expected water level in the river by

summer. It has apparently been two years since the farmers here lost crops due to lack of water. Water is rotated from the upstream to the tail on a cycle which takes 10 days from head to tail.

Water rights exist in the presence of landholdings, and the prevailing customary system of rights has been established through a unit of measurement called a qulba, literally a plough, which is determined according to productivity of a landholding. Accordingly, irrigation water is distributed by a qulba measurement, determined through a customary arrangement, which varies according to the amount of land and hours of permitted watering from the canal system. At present one qulba allows a Qarayateem farmer to water his land for 3 hours. The means by which the qulba water right is upheld is by contributions to the maintenance of the canal system, in both cash and labour. Qulbas were apparently determined by elders at the time of the construction of the irrigation systems, however, there is evidence that the measurement is negotiable and that farmers who cannot provide labour for canal maintenance, or those simply do not need as much water as they are entitled to may reach an agreement with the mirab for this to be changed. If a farmer contributes more to the maintenance works at the intake, they may be entitled to more water, that is, more hours per jerib. Another important issue of note is that a farmer cropping rice requires more water and may negotiate for more water to be allocated. Lands that are shalikari, or rice-growing, require more water, and therefore, the qulba provides more water rights.

The Mirab distributes a letter which states how water will be allocated. usually 8 to 12 farmers will per day will receive water on the daily rotation according to the level of contribution to the off-take. This entitlement usually means that for every 24hour period, 24 qulbas are watered. The mirab and his helpers use torches to work and patrol the structures. That said, there is scope for conflict within the present system. Although upstream users claim that water is distributed using a principle of: "har sarray pa khpal haq bandey" (every man, according to his right), downstream users complain that upstream users' cropping decisions to grow more thirsty crops, such as rice, effectively undermine their entitlement to irrigation water.

Furthermore, sharecroppers have different arrangements with regard to water management, in so far as they are only liable to contribute funds for small structures, whereas they have to provide labour for the main off-take and not the funds for the necessary materials.

Box 1: Asqalan Canal

Asqalan canal extends roughly 18kms from head to tail and sees many of the same issues. Communities follow the contours of the canal and straddle the length of its command area. What is most noteworthy about this system is that it is characterised by a sharp division between upstream (usually Uzbek and Turkmen) water users and downstream (usually Pashtun) water users. Despite underlying tensions about water equity (especially on the part of the downstream users in Torbrakash), what is most significant is that the two sections of the canal have their own mirabs who cooperate in the process of water distribution and while the system is far from perfect⁵, the means by which the communities concerned have been able to mobilise their social capital to not only maintain the irrigation system and negotiate water distribution but to engage in the process of dispute resolution and consultation. GAA has a wonderful opportunity to capitalise on the existing goodwill that exists in this system if and when interventions into water management occur.

It is important that in the process of undertaking interventions in the irrigation sector that GAA recognizes entrenched inequities and formulates means to address them where possible. At present, the people of the Baluch settlements near the head of the Asqalan canal are not considered water 'users' as such and have been excluded from the social mobilization process and the preliminary surveys. They do, however, claim to have been users of the canal in the past and also claim that they suffered, during the mujahideen period, when a local commander diverted a canal away from their land. However, given that they do extract water, with the permission of the mirabs of the canal, using pumps to irrigate small plots near the Alchin Bridge, should they not also be considered and consulted as a part of the SMWA project's activities? It should also be noted that many of these farmers also sharecrop or rent land from other land owners further down the Asqalan canal, which only makes this point more salient. Although there are naturally limitations to the scope of such projects and organizations must be pragmatic in their targeting and implementation strategies, the continued social and physical marginalization of the Baluch should not be overlooked by the SMWA, and GAA should be mindful, given its aims, that it does not engage in activities that may serve to reproduce patterns of vulnerability.

⁵ Downstream water users complain that they do not receive their rightful share of water.

4 Typologies of Households

Attempting to formulate a typology of farming household enterprises would allow for better targeted intervention as part of GAA's work in the SMWA, and the wider KRBP, because it relates the distribution of water to social inequalities.

It would be unhelpful if local classifications were ignored and therefore, local typologies will be used and then expanded upon so that the dynamics of social differentiation and water distribution can be understood.

4.1 Local Categorisation

- Landowner [Zameendar]
- Landless [Bezameen]
- Tenant farmers/sharecroppers [Dehqan]
- Labourers [Mardikar]
- Traders/Shopkeepers [Dukandaar]

The term, Zameendar, typically refers to those that were traditionally large landowners, often from influential clans. Often, households may own land and be engaged in the agriculture but may not be classified as zameendar, because of local social mores.

Mardikar most often refers to landless households where the principal source of income is from labouring. This labour is often seasonal and may involve agricultural labour in the warmer months, and then wage labour in canal maintenance over the winter months. Many of these households often see income-earners travel seasonally to Kabul, Iran or Pakistan for seasonal work, usually over the winter months.

Tenant farmers and sharecroppers are often but not always landless. What is apparent is that they may sharecrop land in because the land that they own may consist of too small an area to make ends meet, or it may not be productive enough. Often this may involve sharecropping in land that can support the production of a particular crop, most often rice.⁶

The term dukandaar, often has negative connotations, especially amongst the Pashtun, because such mercantile professions were not considered honourable. As communities have been transformed over time, households that may once have been considered farmers may now gain most of their income from shop-keeping. It is common for large land-owning household-enterprises to have diversified their capital base with one or more shop in Kunduz city. The rents and revenues associated with this may exceed the profit from agricultural output. That said, most of these individuals would not be considered dukandaar, and would still refer to themselves as zameendar.

Such considerations are important because they provide an illustration of not only the types of livelihood strategies being employed by the target populations but they also give insight into the dynamics and mores of the communities in question. As part of the research a typology was to have been formulated. Although the research is incomplete the following typology is a tentative attempt at drawing a picture of the household types that were observed in Qarayateem.

⁶ Land that can support rice production is referred to as Shalikari and is usually in the lower areas of irrigation systems because this allows for the land to be irrigated. These lands attract high rents due to the lucrative nature of rice.

4.2 The Typology

Based on the data collected, this tentative typology was formulated as a means by which to classify the household-enterprises in question.

- I. Households that gain their main source of income from agricultural production and which hire in labour for all work.
- II. Households that gain their main source of income from agricultural production usually based on using family labour with some additional labour hired in.
- III. Households that gain their main source of income from agricultural production usually based on using family labour with some additional labour hired in, but which also hire out family labour seasonally.
- IV. Households that do not own their own land, sharecrop or rent land owned by others, usually farm with their own family labour, and which also hire labour out occasionally.
- V. Households that do not own land and are principally engaged in hiring out wage labour as a source of income.

4.3 Implications

Attempting to gain an understanding of how farming household enterprises differ and how they might be categorized is important for GAA's work because it may allow for better targeted interventions. It should also be helpful in highlighting patterns of inequality that the organization should be mindful of. For instance, it seems apparent that certain types of households are concentrated in certain areas and attempts to target activities aimed at sustainable social water management should be cognizant of this. In Type I households labour may be principally engaged in other, non-agricultural activities such as office work or shopkeeping, which provide a supplementary income. Such households, in Qarayateem, are concentrated in the central clusters of Haji Juma Khan and Madrassa-e-Qarayateem. These households tend to have larger landholdings, strong social connections.⁷ Type V households are concentrated in the Madrasa-e-Qarayateem area, but, significantly, they form the majority of households in Dubandi, near the head-end diversion structure, and Uzbeka Sufla, at the tail end and on the banks of Chardara River.

Anecdotally, what seems apparent is that there are increasing shifts towards sharecropping land out. This is apparently due to the fact that the agricultural inputs required for efficient farming are not accessible. This often caused by spiraling debts.⁸ That is, households endowed with land are increasingly unable to farm their own land and lack the capital assets to hire labour in. Therefore, what should be noted by GAA with regard to the SMWA project is that, by inference, landholding cannot be considered an absolute indicator of poverty and that its implementation should take this into account.

⁷ Usually to the influential Umarkhel clans.

⁸ Many farmers gain fertilizer, seed and tractor use on loans and if crops fail they often travel to Pakistan or elsewhere to work as day labourers to pay off debt. During this time, they sharecrop their land out and hope to return debt free and with some share in their land's output which can then be put back into the household.

5 Agricultural Labour Relations

The following types of pay-based agricultural labour relationships were observed:

5.1 Agricultural Labour working for daily wages

Hired individually for ploughing, tilling, weeding, spraying of pesticides and herbicides, applying fertilizer and also for harvesting of crops. Usually found in the vicinity of the work area and most often landless.⁹

5.2 Group/Gang Labour

Most evident during time of transplanting of rice (nihal) from nurseries into paddies but also seen during the harvesting of other crops such as wheat. This often involves movements of migrant labourers into the area who stay at local mosques or in guesthouses of prominent locals. Payment methods differ according to the work. Payments for nihal are usually agreed upon according to the amount of rice/land to be planted.¹⁰ A gross sum is paid to a komandan, who divides the pay between the gang, and who also acts as the leader who brokers the pay agreement, organizes the tasks and acts as the liaison between the gang and the farmer.

During the time of nihal, labourers are in high demand due to the dual necessities of wheat harvesting and rice planting in June. This means that daily wages increase and often double (from 150 Afs per day to more than 300 Afs per day). This also means that gang labourers can choose who to work for on a daily basis and may switch according to which farmer provides the best pay and conditions.¹¹ In contrast, the group labourers carrying out other work such as harvesting of wheat are paid a daily wage per individual. Such arrangements usually occur when the demand for labour is so high (usually around June) that there are not enough labourers in the local pool for all agricultural work to be completed. At these times labour gangs migrate to the area and are hired in to assist in the harvest. Traditionally such work was carried out by skilled labourers from specific areas – traditionally from Logar and Badakhshan but today increasingly from other areas such as Maimana.¹² Often these groups will remain after the wheat harvest to perform the rice transplanting.

5.3 Labourers on monthly wages

Usually involves a migrant labourer living with the landowner semi-permanently or for several months of the year. Labourers are often from other parts of areas, eg Baghlan. Such arrangements usually exist where the landowner is wealthy enough to sustain the wage payments, and where local or family labour cannot be employed or do not need to be employed given the position of the family.

5.4 Exchange Labour

Usually observed in situations where farmers do not have the capital assets to pay for hired labour nor the family relations to engage labour from within a pool of relatives. To cope with these circumstances,

⁹ In Qarayateem the landless day labourers often come from the villages in the head (Dubandi) and the tail (Uzbek) to work in the inland irrigation areas. In Asqalan, there are landless labourers spread throughout the system that hire out their labour to farmers.

¹⁰ A typical arrangement in June 2006 involved 10 labourers in a gang working for 2 days on a 1jerib plot and paid 1000 Afghani (100

¹¹ These conditions may include providing night lodgings and meals to labourers as incentives.

¹² According to locals this is because the Badakhshan labourers are now principally engaged in opium production and many are now well off enough not to engage in migrant labouring. Those who do migrate for such labour often have no other livelihood choices.

two or more farming household-enterprises agree to a reciprocal arrangement where the agricultural work of one farming household will be carried out, followed by that of another. This is often observed when short-term but labour intensive work is required, especially during wheat harvests. (see section 6. for further details).

5.5 Family Labour

Extremely widespread in all the study areas and a common means of pooling household or clan labour and saving on wage costs. Often involves employment of children from the family who are taken out of school to help during harvests and periods of high labour demand. Female household members also contribute to agricultural labour by collecting water, vegetables, fodder and tending to livestock.

6 Trends Observed in Livelihoods

Examining the livelihoods activities of households reflects on the social relations that affect the choices that can be made and the opportunities available to household-enterprises. This is important to the SMWA project because it may, amongst other things, illustrate inequalities in water distribution in the canal systems. Furthermore, examining the social relations that are evident paints a picture of how vulnerable certain groups are, and thus provide an indicator for the SMWA project in terms of targeting of interventions.

6.1 Reciprocal and Exchange Arrangements

A common means of increasing the capital base was to rely on familial relations to acquire a yearling calf on loan. The lender household usually does not have the means to feed the cow due to pressure on fodder stocks, and the receiver of the loan is usually a poorer member of the same clan or a friend. The reciprocal arrangement (mafud-e-dojanaba) allows the recipient to utilize the dairy products for household consumption, until the time that the cow produces offspring. Once this occurs, the lender takes back the original cow, and the recipient keeps the new calf as a payment in kind. These arrangements may involve other sharing agreements. Some individuals may buy a cow of a friend on loan, and pay back the money, at a slight rate of interest, over a period of months.

Another situation that was observed in Sufi-Qarayateem was the presence of labour exchanges as a means of coping with reduced capital endowments. This occurs not only in situations where cash is not available to pay labourers, but also occurs between friends and neighbours. Farmers, may agree to help each other with the harvest of wheat crops. One farmer's crop will be harvested first with the help of a neighbour, then the neighbour's crop will be harvested with the help of the first farmer. In cases where labour is exchanged, such arrangements can occur in lean times instead of payment of cash, or they have pre-arranged agreements for such payments in kind. Hashar, occurs in two situations. In the first, a farmer may make an announcement at the mosque, asking for assistance with some kind of labour based farm activity, for instance, nihāl, he will request his friends or family to assist in the work. Those who come forward with help are reciprocally rewarded with labour when they need it. In the second situation, milli hashar, the government sanctions specific days in which farmers and citizens throughout the country should cooperate to conduct community works as a means of building social cohesion. The work conducted on these days often includes reciprocal agricultural labour.

6.2 Access to Loans

For many farming household-enterprises loans are the only means by which they can gain the inputs necessary for agricultural production. These loans are usually between a farmer and the supplier of the

agricultural input, most often a fertilizer seller in Kunduz bazaar, but also seed sellers and those hiring tractors out. The relationships necessary for such loans to be procured are usually built on previously established relations of trust or through social influence and connections. Many farming households are not endowed with such connections and lack the necessary relations to gain agricultural loans.

6.3 Market Processes

One of the major market processes that was seen to be having an impact on the Afghan communities' livelihoods was the influx of foreign, usually Pakistani, wheat and flour onto the local market. This wheat is often smuggled across the border or donated by foreign aid agencies to certain vulnerable families, but these same families often sell these donations in the market. This causes a distortion in the market because there is an oversupply. Farmers complain that they can no longer receive a profitable price for their wheat output at market. For instance, under the Rabbani and Taliban regimes in the 1990s, a local farmer could receive 160,000 Afghanis per sir, but now he can only get 120,000 Afghanis per sir. As a result, the amount of output required to satisfy already overburdened and vulnerable communities was heightened by such market machinations.

6.4 Coping Strategies

Furthermore, patterns and practices apparent in the procurement of agricultural inputs also have consequences on farm activities and tenure when shocks occur. The fact that the purchase of seed and fertilizer inputs on loan is a common practice in the area, explains why there was a high proportion of farmers who experienced crop failure as a consequence of the flood who traveled to other parts of the country or to Pakistan to engage themselves in the labour market so as to accumulate enough cash to repay the debts associated with their lost crops. These farmers sharecropped or rented their land out whilst they were away engaging as wage labourers. Importantly, coping strategies do not only seek survival, but also maintenance of human needs and maintenance of household cohesion, and this has an ultimate effect on land use patterns. The fact that several interviewees in Colabi and Naqel who became indebted did not travel to Pakistan or Iran for seasonal labour as a means of protecting the household from the burden of debt, cited that they would not leave their young, dependent families alone in the village is even if this was a viable means of freeing the family from the debt burden arising from the flood damage. Those traveling for seasonal labour tended to be young and unmarried males without dependent relatives, including elderly parents.

6.5 Social Capital and Power Dynamics

The stated goals of the KRBP of including all sectors of the target populations in the process of fostering a new sustainable and equitable system of water resource management face manifold obstacles if they are to be achieved. There is widespread discontent regarding the nature of water management and distribution systems and the SMWA project must recognize this when planning and undertaking interventions.

The institution of the mirab is a highly influential one in a community that is largely dependent on irrigated agriculture for livelihood. Landless individuals cannot hold the position, but the size of landholdings and their location along a canal is not important for candidacy. However the system, whilst significant as it is an indigenous management mechanism which in theory protects rights, through seemingly democratic means, to water and insulates communities against the potential for violence, is not without its flaws. The fact that the landless are not eligible for candidacy, nor to vote in elections, is to be expected, as the institution of mirab exists in the protection of water rights for landowners. However, not all landowners are part of the process. Important distinctions need to be drawn between large landowners and small landowners, upstream landowners and downstream landowners, as well as landowners of different social affiliations. The downstream villagers in Qarayateem complain that aside from lacking the local familial links through which to form a formidable voting base for selection of the

mirab, they are apparently never informed of imminent elections and come to know of new selection only when the mirab visits the village to collect his dues. This they attribute to the fact that they are in the downstream and are not a part of the dominant clan. Furthermore, there is a nexus existing between the mirabs and elders councils which elect them, and the Irrigation Department. The provincial head of the Irrigation Department, exerts significant influence in the agricultural communities of Kunduz. It is he who informs elders of villagers about the imminent selection of mirabs and although it is unclear about the influence he has on ultimate selection, he is known to give his backing to particular candidates when they oblige him with requests that he visit their villages and enjoy their hospitality.

Similarly, other farmers claim that the institution of mirab is unrecognizable and that there has been a breakdown of the previous system. The reputation and experience which were once prized as the merits upon which a successful candidate was chosen are no longer important. Instead, achieving status as a mirab is now more about consolidating social and economic influence. Many disgruntled farmers claim that, despite the fact that lists exist which clearly state how water will be distributed in a rotation, those with influence over the mirab are able to manipulate water diversions to their benefit. Those less endowed with social influence or the funds to bribe the mirab or other officials are thus denied their rightful share of irrigation water.

7 Conclusions and Recommendations

What should be apparent from even a cursory reading of this report is that the research is inadequate and incomplete because while observed trends are helpful to an extent, what is needed for effectively targeted interventions is highly nuanced investigation of the factors and processes at play in the irrigation systems concerned. It is therefore recommended that the research into the livelihoods issues particularly the household survey in Qarayateem be allowed to continue or that a similar study be conducted in another system. That said, the trends observed do illustrate how existing social and spatial dynamics are affecting the vulnerabilities of communities in the target irrigation schemes. It is recommended that, if the goals of the SMWA project are to be realized, that these factors be considered when undertaking interventions. If not, the project runs the risk of contributing to the reproduction of vulnerabilities.

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