

Afghanistan Research and Evaluation Unit
Synthesis Paper Series

WATER MANAGEMENT, LIVESTOCK AND THE OPIUM ECONOMY

Opportunities for Pro-Poor Agricultural Growth



Lorene Flaming and Alan Roe

June 2009



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About the Afghanistan Research and Evaluation Unit

AREU is an independent research organisation based in Kabul. AREU's mission is to conduct high-quality research that informs and influences policy and practice. AREU also actively promotes a culture of research and learning by strengthening analytical capacity in Afghanistan and facilitating reflection and debate. Fundamental to AREU's vision is that its work should improve Afghan lives.

AREU was established in 2002 by the assistance community working in Afghanistan and has a board of directors with representation from donors, the United Nations and other multilateral agencies, and non-governmental organisations. AREU currently receives core funds from the governments of Finland, Norway, Sweden, Switzerland and the United Kingdom. Specific projects have been funded by the Foundation of the Open Society Institute Afghanistan (FOSIA), the Asia Foundation (TAF), the European Commission (EC), the United Nations High Commissioner for Refugees (UNHCR), the United Nations Children's Fund (UNICEF), the United Nations Development Fund for Women (UNIFEM) and the World Bank.

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Acronyms

ARDZ	Agriculture and Rural Development Zones
AGE	Anti-Government Elements
ANDS	Afghanistan National Development Strategy (2008)
ANDS/ARD	ANDS Agriculture and Rural Development Sector Strategy
ANDS/CN	ANDS Counter Narcotics Sector Strategy
ANDS/WRM	ANDS Water Resource Management Sector Strategy
AREU	Afghanistan Research and Evaluation Unit
ADB	Asian Development Bank
CARD	Comprehensive Agriculture and Rural Development
CDC	Community Development Council
IIP	Implementation and Investment Plan
IMF	International Monetary Fund
ISAF	International Security Assistance Force
GAA	German Agro Action (also known as Deutsche Welthungerhilfe)
GIS	Geographic Information System
HE	His Excellency
HIPC	Heavily Indebted Poor Countries
IWRM	Integrated Water Resources Management
KRBP-TA	Kunduz River Basin Programme - Technical Assistance
M&E	Monitoring and Evaluation
MAAHF	Ministry of Agriculture, Animal Husbandry and Food (now MAIL)
MAIL	Ministry of Agriculture, Irrigation and Livestock (formerly MAAHF)
MCN	Ministry of Counter Narcotics
MDG	Millennium Development Goal
MEW	Ministry of Energy and Water
MRRD	Ministry of Rural Rehabilitation and Development
NATO	North Atlantic Treaty Organization
NDCS	National Drug Control Strategy (2006)
NDF	National Development Framework
NGO	nongovernmental organisation
NRVA	National Risk and Vulnerability Assessment
NSP	National Solidarity Program
O&M	operations and maintenance

PAG	Policy Action Group
PDPs	Provincial Development Plans
PEP	Poppy Elimination Programme
PIP	Public Investment Programmes
PMIS	Participatory Management of Irrigation System
PRSP	Poverty Reduction Strategy Paper
R&D	Research and Development
UNDP	United Nations Development Programme
UNODC	United Nations Office on Drugs and Crime
WOL	Applied Thematic Research into Water Management, Livestock and the Opium Economy
WUA	Water Users Association

Glossary

<i>abi</i>	irrigated land
<i>arbab</i>	a senior elder of a village community, representing the interests of his community to district and provincial government
<i>chakbashi</i>	community-level water bailiff on tertiary canals (northern Afghanistan)
<i>jerib</i>	unit of land measurement (1 <i>jerib</i> = 0.2 hectares)
<i>karez</i>	a common form of irrigation infrastructure in Afghanistan comprising a series of well-like vertical shafts that tap groundwater and are connected by gently sloping tunnels installed on sloped terrain to allow water to flow through the system by gravity and avoid the need for pumps
<i>kuchis</i>	nomadic pastoralists
<i>lalmi</i>	rainfed land
<i>mirab</i>	water masters
<i>watani</i>	of the homeland

Executive Summary

This paper brings together key findings and recommendations from three years of research conducted by the Afghanistan Research and Evaluation Unit (AREU) under the “Applied Thematic Research into Water Management, Livestock and the Opium Economy” project (hereafter abbreviated to WOL). Funding for this project has been provided by the European Commission. This paper builds directly on the research findings presented in the first and second year WOL Synthesis Papers.

The major objective of this research is to enhance the sustainability of Afghan rural livelihoods and reduce dependency on illicit crops by providing policymakers with clear and accurate information on the use, management and role of natural resources in farming systems, and how these influence opportunities for agricultural development. The research is intended to produce evidence-based recommendations to increase the effectiveness of agricultural and rural policy. To achieve this goal the WOL project team has undertaken an ambitious programme of field research, spanning eight Afghan provinces and many rural communities, using a combination of research methods, and integrating diverse thematic studies through an empirically grounded farming systems approach. An important theme is the potential for farming communities to respond to planned opportunities for agricultural growth, and how policy initiatives can be most effectively implemented.

Findings in overview

Approaching agricultural development from a farming systems perspective, the findings of WOL research cast further light on the complex relationship between agricultural production and the construction of rural livelihoods. Evidence suggests deep integration between farm production to supply markets, farm production to supply the household, and off-farm economic activities. Although the relative importance of each component varies with individual household strategies, the current policy emphasis on production for market overlooks the valuable contribution that the

production of foods for domestic consumption makes to the agricultural sector. This is particularly true in remote areas where access to markets may be irregular, opportunities for off-farm incomes are limited and farm cash flows often in deficit. In these situations, production for domestic consumption will be integral to sustaining farming activities and producing a surplus for markets.

Research findings and policy recommendations arising from WOL research are detailed below.

Rural Livelihoods

The exposure to risk and the lack of means to cope with it perpetuate poverty and vulnerability. Risk avoidance causes households to forfeit opportunities that might offer routes out of poverty. “Risk” takes many forms for rural households, including drought, harsh winters, price fluctuations, pest and disease outbreaks, and a death within the family. It also includes the exercise of power in arbitrary and unaccountable ways by government or non-state actors (such as drug lords) that directly harms the poor and exacerbates inequalities.

Data indicates a strong subsistence orientation in irrigated farming, reflecting an aversion to risk in a high-risk production environment. Farmers commonly prioritise cultivating food crops to meet their household requirements and achieve a degree of independence from markets. However, few households have access to the resources needed to be self-sufficient. Most need to generate cash incomes for purchases by cultivating a high-value crop, selling livestock products, or off-farm wage labour. Most Afghan farmers practice a diversification strategy.

Specialised production for market supply is uncommon among farmers involved in the WOL study and is normally associated with high risks. Commercial agriculture is sometimes practiced by wealthy farmers with sufficient (natural, financial and social) resources to survive crop failure or the collapse of market prices. Only under these conditions do farmers appear confident to practice

“income-maximising” behaviour. At the other extreme, households under conditions of severe resource scarcity may be pushed to produce for the market if they cannot produce sufficient food to meet their requirements with available resources. In Afghanistan, this often takes the form of poppy cultivation.

WOL research suggests that growth in horticultural production will primarily benefit farmers with preferential access to irrigation water and so economic growth will initially be spatially clustered in areas that are already comparatively prosperous. Even where horticultural production is stimulated outside of prime irrigated lands, a significant proportion of the benefits will be directed back to landowners and patrons because of the high incidence of sharecropping in those areas. If support for agribusiness is solely focused on the populated river valleys, there is a strong possibility that communities in marginalised outlying areas will not share the same level of access to new employment opportunities. Furthermore, the concentration of agricultural development in areas that already enjoy greater access to economic opportunities and resources will contribute little to the goal of reducing poppy cultivation where farmers have few livelihood alternatives.

WOL research shows the comparative advantage of livestock production under rangeland conditions. Building livestock value chains in these marginal, un-irrigated areas where farmers and pastoralists have few other livelihood options and are highly vulnerable to risk offers a real opportunity for poverty alleviation.

WOL research highlights the importance of understanding the conditions under which a shift to greater commercialisation will strengthen a household’s livelihood strategy.

Land Tenure

A comprehensive land registry that can serve as a foundation for future land administration is clearly needed, but there are many challenges in establishing such a registry. There are strong arguments in favour of the registration of deeds

as an intermediate step to determining full title. A deeds registry would offer many benefits (to both users and the government), could be accessible to communities and can be started immediately at comparatively low cost.

Furthermore, while planning for agricultural growth and poverty alleviation tends to assume farmer land ownership rights, WOL research suggests that up to 30 percent of irrigated land may be held under forms of subordinate rights (principally sharecropping arrangements). WOL findings show that the sharecropping terms for high-value cash crops (such as those prioritised under the agricultural sector strategy) heavily favour the landowner over the farmer. This finding is particularly important in understanding how the benefits of planned growth in the horticultural subsector will be spread. Consequently, agricultural development initiatives intended to benefit the most vulnerable may be more effective if directed at strengthening economic activities that are not subject to sharecropping terms (e.g. through off-farm wage incomes, or livestock production).

Water Management

Owing to both the hydraulic attributes of irrigation structures and the way in which water resources are managed, farmers in the lower catchment irrigation systems face systemic inequities in the availability of water. Water scarcity at the tail end of canals limits the possibilities for high crop diversity and cash crops and results in reduced yields for other types of crops. Consequently, agricultural opportunity and livelihood security generally decreases along the length of irrigation systems and river basins, with downstream farmers severely disadvantaged. Water scarcity is exacerbated by the state of irrigation infrastructure in Afghanistan, which is estimated by MAIL to operate at roughly half its potential efficiency (on average) due to lack of maintenance and improper design.

Research confirms that farmers from semi-irrigated upper catchment areas face fundamentally different types of irrigation problems than those in the lower catchments. While water availability at source is a major constraint in upper catchment

areas, potential system improvements may allow available resources to be more effectively managed, adding to the agricultural options and security of farmers in outlying rural areas. This would benefit vulnerable communities, which are in some areas heavily reliant on opium cultivation, and thus be consistent with pro-poor policy objectives.

WOL studies suggest that when there is sufficient water flow to meet the major needs of all irrigators (upstream and downstream), community water management systems may be effective in fine-tuning the water allocations between participants. However, severe water stress is likely to overwhelm the capacity of community water management to redress scarcity. Unlike surface water, ground water from wells and traditional *karez* is commonly managed as private property by owners, outside the authority of community-based management systems. Unregulated extraction has reduced the amount of water available to other water users and raises concerns about the long-term sustainability of the ground water supply.

There is a need for an overarching basin-scale framework that holds all water users accountable and establishes mechanisms for conflict resolution. The greatest management challenges for River Basin Agencies will be in coordinating water management between water users at the basin level, where there is no precedent for cooperation.

Livestock

WOL livestock studies suggest that production of small ruminants under extensive rangeland systems (i.e. nomadic pastoralism or integrated into rainfed farming systems) tends to be more market-orientated than in irrigated farming systems, where animals do not usually constitute a major source of farm income. Gross livestock production margins appear to confirm this. Thus, while the highest productivity may be achieved with livestock integrated into irrigated farming systems, gross margins may be reduced by relatively high feed input costs. The best livestock gross margins appear to be achieved through low-input, low-output systems in which animals rarely achieve their genetic potential. However, these extensive forms

of livestock production are increasingly threatened by loss of access to traditional grazing lands and land degradation.

Collated data on livestock market transactions reveal very limited correlation between animal condition (e.g. size, age or weight) and price, and there are therefore few obvious incentives for producers to invest to improve animal condition. Nevertheless, anecdotal evidence suggests a growing practice in which farmers buy small numbers of weaned lambs from rangeland producers and fatten these on cultivated fodder, crop byproducts and residues, before selling them at a higher price. This can constitute an important form of diversification for small farmers, and adds value within the livestock sector.

While strategies to strengthen value chains for horticultural crops will primarily benefit those with preferential access to land and irrigation water, the development of value chains around livestock has the potential to target comparatively resource-poor and marginalised agricultural producers. These include farmers in remote rangeland areas, and smallholders or sharecroppers in river valleys who are unable to produce high-value crops. The development of such value chains would contribute to poverty reduction, and also represent the most effective strategy for stimulating economic growth.

The Opium Economy

Poverty, poppy and insecurity are intrinsically linked in Afghanistan. While opium poppy has been cultivated in a wide range of areas and by varied socioeconomic groups, it has tended to be most concentrated in areas with limited access to irrigated land, high population densities and limited off- and non-farm income opportunities—or where insecurity is greatest.

Opium production is deeply embedded in the rural economy and has a strong multiplier effect in terms of creating employment and off-farm opportunities. In the absence of careful targeting, rapid, large-scale decreases in poppy cultivation generate significant negative impacts, whether

achieved by eradication or pressure on farmers to not plant. These include the direct impact of loss of household income from not planting poppy, and the indirect impacts of lower rural wage rates and increased rural unemployment, and household debt. Enforced reductions in opium cultivation tend to have a disproportionately severe impact on the poorest and most vulnerable. Although opium represents a profitable high-value crop for a small number of wealthy landowners, for many households afflicted by severe resource scarcity, it constitutes the only crop that can sustain a farm-based livelihood given available resources.

Greater understanding of the role that opium has played in rural livelihoods is needed. Some crops—particularly as part of mixed cropping systems combined with non-farm income opportunities—can compete with poppy in terms of financial returns when opium prices are lower. But no crop offers the same qualitative attributes: relative drought resistance, non-perishable, an almost-guaranteed market, traders who offer advance payments against the future crop or agricultural inputs, buyers who purchase at the farm-gate and landowners who provide preferential access to land through sharecropping or lease arrangements.

These characteristics of poppy and the role that it has played in the rural economy with respect to enhanced food security (through advance payments and increased household income), economic opportunity (access to land, credit, markets and other critical inputs) and reduced risk suggest the kind of interventions and development outcomes needed to both compete with poppy and to mitigate the negative impacts associated with reductions in poppy cultivation.

WOL studies suggest that a counter-narcotics policy focused on suppressing the areal extent of poppy cultivation risks targeting the symptoms of the opium economy, rather than its root causes, and is unlikely to facilitate a sustainable transition away from the crop. Whether farmers can respond to government incentives or threats to reduce poppy cultivation depends on their ability to construct a livelihood outside of the opium economy. Achieving a sustainable, opium-free rural economy is likely

to take many years, and policymakers should appreciate that not all provinces, districts or socioeconomic groups will make progress toward this goal at the same rate. Nevertheless, there is a strong case for pressuring wealthy opium farmers, agents, dealers and their patrons (including corrupt government officials) to exit the trade.

General Recommendations

Address inequities in access to natural resources

Initiatives are required to help strengthen the capacity and governance of community-based institutions and mechanisms that mediate access to natural resources in Afghanistan. While this may require some legislative reform and external oversight, considerable progress can be made by making decision-making more inclusive and fostering wider participation. Linking natural resource decision-making to emerging decision-making structures such as Community Development Councils (CDCs) may, in some cases, help redress inherent power asymmetries.

A participatory diagnosis of current and historical water management practices and issues should be the starting point of any attempt to strengthen management practices at the canal level. This should be combined with data collection on water distribution and the hydraulic properties of canal systems to provide evidence for diagnosis and decision-making. Blueprints for creating WUAs should be avoided in favour of “just enough organisation” to enable communities to address practical problems and reach agreement on incremental changes in rules and institutional arrangements.

Balancing pro-poor and economic growth agendas

Rural Afghan communities have differing capacities to participate in agricultural subsectors. While growth in the horticultural subsector will tend to reinforce the socioeconomic status quo, well-targeted interventions to strengthen livestock value chains can bring pro-poor opportunities to

remote and marginal rangeland areas, and to small farmers, and is also the most rational approach to development of the livestock subsector. Effort should be made to avoid concentrating all agricultural initiatives, services and facilities in the populated river valley areas, where development activities have traditionally been focused.

Achieving economic growth in the agricultural sector is not in all cases consistent with the broader political goal of achieving rural stability. Policymakers need to consider and balance the tradeoffs inherent in fostering a competitive rural economy and building a stable rural society, recognising that rural stability is a prerequisite for sustainable growth of the rural economy.

Strengthen farming systems, not only market chains

Stimulation of agricultural production for markets also requires that the livelihoods of farming communities working within the agricultural sector be supported. At present, development strategies tend to focus narrowly on building market chains for agricultural products, but farm livelihood security can also be enhanced by improved access to off-farm incomes, or by supporting farm production for domestic consumption. Development planners must take a broader view of how agricultural livelihoods are constructed.

Recognition of the value of non-market agricultural production

The heavy emphasis of policy on agricultural production for market supply risks overlooking the important functions of non-monetarised production. Particularly in remote locations with poor access to markets and services, farm products can make important contributions to household well-being, both in the long term and during specific periods of crisis or special need. These functions include bridging periods of cash scarcity, non-monetary transfers to service social networks, and the maintenance of livestock as stores of value.

Expand opportunities for on-farm, off-farm, and non-farm labour

Functioning labour markets and sufficient employment opportunities at adequate wage rates are central to achieving improvements in rural livelihood security. Current strategies could perhaps benefit from greater distinction between on-farm, off-farm and non-farm jobs. All play an important role in diversification and income generation. In addition, it is important to systematically consider how proposed interventions directly or indirectly affect employment opportunities to ensure that efforts to raise agricultural productivity do not eliminate jobs.

Support transition to licit agricultural livelihoods

Creating an enabling environment that supports a sustainable transition to licit agriculture will require a long-term effort to address the underlying causes of poverty and disadvantage in rural Afghanistan. This will involve measures that specifically target community needs (e.g. extending economic opportunities to outlying areas, fostering livelihood security and addressing asymmetries in access to resources). Efforts to suppress poppy cultivation must selectively target those sites where farmers can choose whether or not to grow poppy.

Promote evidence-based decision-making

The Year 1 WOL Synthesis Paper highlighted the need to establish data collection standards in Afghanistan to promote integration and comparison of data from various sources, coupled with consolidation of data in a central database to improve access. Some progress has been made on this front with the creation of the National Agriculture Information System in the Ministry of Agriculture, Irrigation, and Livestock in 2007. As a next step, a high priority should be placed on mapping the factors that determine rural livelihood opportunities and risk, so that interventions can be planned, coordinated and targeted accordingly. This includes access to market roads, irrigation infrastructure and services; landscape features; natural resource characteristics; climate data; wage rates; household incomes and other socioeconomic data; security indicators;

market prices; incidence of crop and livestock disease; and other important factors. Mapping the context that shapes livelihood opportunities and farmers' choices would support efforts to target counter-narcotics initiatives in strategic areas and

minimise negative impacts on poor and vulnerable groups. It would also support efforts to implement an inclusive and balanced agriculture and rural development strategy that supports both economic growth and poverty alleviation.

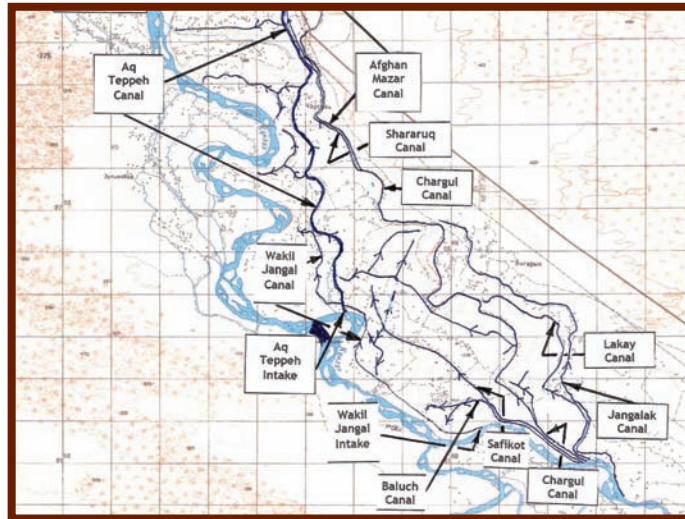


Chart showing canals along the Kunduz River (Ian McAllister Anderson)



An irrigated river valler in Baghlan (Alan Roe)

1. Introduction

This paper synthesises the main findings and conclusions of over three years of research conducted by the Afghanistan Research and Evaluation Unit (AREU), under the EC-funded study “Applied Thematic Research into Water Management, the Opium Economy and Livestock” (WOL).

This paper is structured in three chapters. The first chapter presents the WOL study objectives and methodology, a brief background description of the agricultural and natural resources sector, and highlights both the policy context that shaped the WOL research agenda and the current policy context into which the study’s recommendations feed. The second chapter presents the principal research findings on land, water, livestock and opium cultivation, respectively. The final chapter sets out recommendations for policymakers.

1.1 Study objectives

The study aimed to generate evidence-based recommendations for improving the effectiveness of agricultural policy and rural programming by providing policymakers with clear and accurate information on the use, management and role of natural resources in rural livelihoods, with a focus on land, water, livestock and opium cultivation. Within each of these areas, the following more specific directions for research were established:

- **Land Tenure:** to consider the effectiveness of the existing land policy framework and provide recommendations for its improvement; to investigate the forms of tenure farmers and other users hold to land resources; and to study the advantages and constraints of existing systems of land tenure and how these influence agricultural use and natural resource management (NRM).
- **Water Management:** to investigate how irrigation water is managed in Afghanistan, how existing systems operate, how these systems are managed and how effectively they operate; to ascertain the impacts of conflict, drought and

development interventions on irrigation water supply; and to develop recommendations for improving the equity and efficiency of water management.

- **Livestock:** to investigate the role of different types of livestock in rural livelihoods farm systems, including production constraints and opportunities and seasonal dimensions; to explore the management of livestock, access to pastures and the sustainability of pasture use; to study the operation of markets for livestock and livestock products and assess the impact of conflict, drought and development interventions on production; and to produce recommendations to improve the productivity and sustainability of livestock production.
- **Opium:** to explore the reasons for farmer decisions in the cultivation of poppy and analyse the socioeconomic consequences; to investigate the impact of conflict, drought, development programmes and government policy on the cultivation of poppy; and to produce recommendations for supporting the sustainable reduction of poppy cultivation in Afghanistan.

WOL research in the first year (2005-2006) focused on the potential for the horticulture and livestock subsectors to stimulate growth in the rural economy. The findings suggested that a substantial proportion of the farming households studied were not well positioned to take advantage of the planned economic development model articulated in the interim Afghanistan National Development Strategy (ANDS) that was in the process of development. In its second year, WOL research moved from the descriptive to the analytic. Whereas research during the first year described the status of farming households, studies in the second year (2006-2007) focused more closely upon how farming systems actually work (in terms of resource access, production, consumption, market access) and how these processes intersect with rural livelihoods. The overall objective in doing so was to identify specific areas of opportunity and constraint for farmer participation in agricultural and rural strategies, and

how these might best be refined and implemented. A specific line of enquiry was identifying the factors that drive farmer decisions to cultivate opium and the impact of counter-narcotics strategy on rural livelihoods. WOL research in the third year (2007-2008) looked at livestock productivity and regional market prices, the functioning of traditional water management systems, and water sector strategy.

1.2 Study methods

The research team used an integrated farming systems approach to frame the research, viewing decisions about the use of individual resources and farming strategies as closely linked to the availability and management of other resources. The team further recognised that farming (and rural livelihood) systems are embedded within complex and dynamic biophysical, political and economic landscapes. The study used three complementary forms of data collection to sufficiently capture this complexity: thematic studies, household monitoring surveys, and physical measurements.¹

The thematic studies involved in-depth explorations of key issues relevant to one of the core resources central to rural livelihoods in Afghanistan: livestock, water, land and opium poppy. Expert international researchers led these studies, using a range of research methods, though most often depending upon small group or individual farmer interviews to delve into decision-making around resource use and access.

The in-depth thematic studies were complemented by a household sample survey developed to support longitudinal household monitoring of farming systems over the course of the study. The longitudinal studies were designed to capture farmers' management choices and the function of farming systems within the context of broader livelihoods. The household was identified as the most relevant level for this study, being the primary unit

of production, consumption and decision-making. This extensive data collection was undertaken over a period of three years in eight provinces; see Table 1 over page and the Annex map for details about study sites. Research sites were selected to provide diversity in agro-ecological areas, including irrigated, semi-irrigated and rainfed sites, with the expectation that natural resource access and use and livelihood outcomes would vary across these different areas. The research also encompassed diverse communities and households, including sedentary cultivators, agropastoralists, nomadic pastoralists, sharecroppers and agricultural labourers.

Physical measurements were taken on farms involved in the household monitoring to track livestock growth rates and lactation output. In four selected sites physical characteristics of irrigation systems were mapped.

The research team worked in cooperation with two NGO partners, The Danish Committee for Assistance to Afghan Refugees (DACAAR) and German Agro Action (GAA, also known as Deutsche Welthungerhilfe), for the household monitoring survey and physical measurements. The study team also worked with key Afghan stakeholder institutions, including the Ministry of Agriculture, Irrigation and Livestock (MAIL), the Ministry of Rural Rehabilitation and Development (MRRD), the Ministry of Energy and Water (MEW), the Ministry of Counter Narcotics (MCN) and the Research Centre of Kabul University.

Findings and recommendations of the thematic studies and the results from analysis of the household monitoring data were summarised in considerable detail in the two synthesis papers covering the first and second year research. This synthesis paper covers all three years, highlighting key findings and recommendations from the WOL study documents.

¹ For more details on the study methods, and particularly the sample for the household monitoring survey, see Alan Roe *Water Management, Livestock and the Opium Economy: Natural Resources Management, Farming Systems, and Rural Livelihoods* (Kabul: Afghanistan Research and Evaluation Unit, 2008).

Table 1: Distribution of households within monitoring group

Province	Research site	Number of households	Production system
<i>Ghazni</i>	Zala Qala	7	Semi-irrigated
	Pyada Rah	2	Semi-irrigated
	Qala-i-Naw	27	Irrigated
	Turmai	11	Irrigated
	Chechel Gumbad	6	Irrigated
<i>Herat</i>	Khalifa Rahmat	12	Rainfed
	Tonian	13	Irrigated
	Gawashk	10	Irrigated
	Ghorak	7	Semi-irrigated
	Sir Zar	12	Rainfed
<i>Kunduz</i>	Abdul Nazar	5	Rainfed
	Alam Boy	4	Rainfed
	Dana Haji	5	Irrigated
	Wakil Jangal	19	Irrigated
	Afghan Mazar	17	Irrigated
<i>Nangarhar</i>	Maruf China	11	Semi-irrigated
	Sra Qala	11	Semi-irrigated
	Khawaji	7	Semi-irrigated
	Othar Khel	10	Semi-irrigated
	Janikhel	18	Irrigated
<i>Nomads</i>	Khomari Khel	12	Pastoral
	Kutub Khel	10	Pastoral
Total		236	

2. Context

2.1 Agriculture in Afghanistan

Afghanistan is a rugged and mountainous country of about 65 million hectares (ha), of which only about 12 percent (8 million ha) is under cultivation. Just under half of all agricultural land is irrigated (*Abi*) and the remaining portion is rainfed (*Lalmi*), although these proportions fluctuate annually. However, owing to comparatively poor yields from unirrigated lands it is the irrigated portion that engages the larger part of the rural population and accounts for almost 80 percent of total crop output.² The most intensively settled and cultivated areas are therefore located on alluvial plains and in river valleys. Irrigation water supply in these valleys is seasonally linked to mountain snow melt.³ Where conditions allow (in the warmer river valleys with sufficient irrigation water), biannual cropping is possible. A large diversity of crop types is cultivated in Afghanistan, both for market supply and domestic consumption.

Small areas of mountain forest remain in the highlands of eastern and southeastern Afghanistan and approximately 45 percent of the national land area is categorised as “rangeland,”⁴ which supports the extensive production of livestock by both sedentary and nomadic herders. Historically, migratory pastoralists were the main producers of small ruminants⁵ and their products.

Traditionally, the agricultural sector has formed the largest part of the Afghan economy, with sales of dried fruits and nuts contributing some

40 percent of total export earnings in the late 1970s. Livestock and their products also made important contributions to national earnings at the same time.⁶ In 1978 Afghanistan was not only self-sufficient in food but also a considerable exporter of agricultural products.⁷

Just as Afghanistan was emerging from chronic instability in 2002 under the newly installed Transitional Government, severe drought struck rural areas in the South and West of the country leading to widespread drying of springs and wells, failure of crops and further abandonment of land.⁸ These conditions hit the livestock sector particularly hard, as it is heavily dependent on pastures and natural rangelands for extensive livestock production.

While reports and assessments tend to simplify the combined impact of conflict and drought as “disastrous” for rural Afghanistan, examination of existing data reveals a more nuanced picture.⁹ Not all agricultural subsectors were affected in the same way, with some proving more resilient to disturbance than others.

Data indicates that the area of irrigated cropping fell from over three million hectares in the mid 1970s to under two million by the mid 1990s. This has been attributed to the widespread exodus of farmers from their villages in some provinces during the Soviet occupation.¹⁰ By 2003, despite the drought conditions prevalent in some parts of the country, the area under irrigated cultivation

2 Food and Agriculture Organization of the United Nations, “Afghanistan Agricultural Strategy” (Rome: Food and Agriculture Organization, 1997).

3 Raphy Favre and Golam Kamal, “Watershed Atlas of Afghanistan” (Kabul: AIMS, 2004).

4 Asian Development Bank, “Natural Resources in Recovery” (Manila: Asian Development Bank, 2004).

5 Cud chewing livestock—sheep and goats for the purposes of this paper.

6 ADB, “Natural Resources.”

7 FAO, “Afghanistan Agricultural Strategy.”

8 Ministry of Irrigation, Water Resources and Environment, “Emergency Drought Assessment in Twelve Vulnerable Southern Provinces” (Kabul: Ministry of Irrigation, Water Resources and Environment, 2004).

9 There is very little accurate data available describing agriculture, livestock or human populations during the 1980s and 1990s. The CSO figures presented here should be regarded as indicative only.

10 FAO, “Afghanistan Agricultural Strategy.”

exceeded 1970s levels. Subsequently, irrigated cultivation again decreased and stands at about three-quarters of the pre-conflict cultivated area.

Taking cereals (wheat, rice, barley and maize) as a broad indicator for food crops, data suggests that national cereal production has been relatively resilient through the period of conflict, generally maintaining production of over 3 million tonnes annually (about 75 percent of 1970s production) until the late 1990s. However, cereal production appears to have been very sensitive to the impact of the drought (1998-2002) and production fell by almost 50 percent during this time.

Sheep and goat populations have been more variable. During the early years of conflict in the late 1970s early 1980s, small ruminant populations diminished by about a third. After 2001, despite the ongoing conflict in some regions, they recovered close to their pre-war population. But during the years of drought that followed, sheep and goat numbers again fell precipitously. More recently, there are increasing numbers of sheep and goats in Afghanistan, but they have still not regained their pre-war population. Also, lower value goats (managed for domestic supply) now constitute a much higher proportion of the national flock than they did previously.¹¹ In contrast, data suggests that while the national cattle population fell sharply during the early years of conflict, it gradually re-established itself through the 1990s. This process of restocking was much less sensitive to the impact of drought than small ruminant or cereals production.

Overall the data, though unreliable, indicates complexity in how different parts of the agricultural economy have responded to the periods of localised and episodic conflict, drought and population displacement. While the area of cereals cultivated has only recently returned to pre-conflict levels, improvements in yield means that overall cereal production has the potential to now considerably exceed pre-conflict production. But neither the overall area of irrigated cultivation nor small

11 Data from Central Statistics Office, "Afghanistan Statistical Yearbook" (Kabul: Central Statistics Office, 2006).

ruminant production has yet recovered to pre-war levels. The same is also evident of some high value horticultural crops such as almonds, walnuts and apricots and figs.¹² Consequently, important export-oriented products and the market chains that they historically supplied have been weakened.¹³

Recent trends in the use of natural resources and agricultural productivity need to be placed in the context of the population that these resources support. Estimates suggest that since the late 1970s, the Afghan population has risen from 13 million to somewhere within the range of 24.5-29.5 million in 2007.¹⁴ A study conducted in the spring of 2007 estimated a seasonal poverty rate of 42 percent.¹⁵ This population growth and high estimated incidence of poverty have implications for land holdings and grain self-sufficiency, and import dependence.

First, there is growing evidence that rural livelihoods are diversifying away from dependence on purely agricultural production, occurring either as coping strategies for the poor or accumulation strategies for the wealthy. Rural livelihoods research done in 2003-4 indicated that more than half of rural households studied were not grain self-sufficient, and a high proportion of the same group depended on non-farm labour as their primary income source.¹⁶

12 Central Statistics Office, "Afghanistan Statistical Yearbook."

13 However, dried fruit and nut exports have increased considerably since 2001 and now constitute 22.5 percent of total export earnings (Central Statistics Office, "Afghanistan Statistical Yearbook").

14 These projections were given by the Food and Agriculture Organization of the United Nations, "Afghanistan: Contribution to a Conservation Strategy" (Rome: Food and Agriculture Organization, 1981). Central Statistics Office, "Estimated Population of Afghanistan 2008-Afghanistan Statistical Yearbook" (Kabul: Central Statistics Office), suggests a somewhat lower figure of over 25 million, while the CIA Factbook 2009, <https://www.cia.gov/cia/publications/factbook/print/af.html> (accessed June 2009), suggests over 33 million.

15 International Monetary Fund, "Islamic Republic of Afghanistan: Poverty Reduction Strategy Paper - Joint Staff Advisory Note," Country Report No. 08/193, (Washington: International Monetary Fund, 2008), 1.

16 Jo Grace and Adam Pain, "Rethinking Rural Livelihoods in Afghanistan" (Kabul: Afghanistan Research and Evaluation Unit, 2004). This study encapsulated 390 households in 21 villages through 7 provinces. See also Raphy Favre, "Agriculture in Afghanistan: Discussion

Second, Afghanistan has become increasingly food deficient. Even in a good agricultural year such as 2005, the country still faced a ten percent cereals' deficit.¹⁷ As local production falls behind growing consumer demand, there are clear trends toward increasing imports of many domestically produced food types.

At the time the WOL project commenced in 2005, the return of displaced people after years of conflict and drought was placing considerable strain on the use and management of limited agricultural land resources and exacerbating inequities. The erosion of customary land rights and the break-down of state mechanisms for land administration has meant that land tenure insecurity has become a seriously divisive issue in some rural communities.¹⁸ Collectively, these problems have been associated with rural vulnerability and exploitative land relations, together with under-productivity. Data suggests that in many areas, farm plots may be too small to generate adequate household incomes.¹⁹

However, while food deficiency remains a problem and the years of political turmoil, institutional weakness, insecurity and the disruption of market chains have adversely affected some types of high-value agricultural production (e.g. vegetable cropping), the illicit cultivation and marketing of opium poppy has thrived under these same conditions.

According to the United Nations Office on Drugs and Crime's (UNODC) 2008 Afghanistan Opium Survey, Afghanistan produced 7,700 metric tonnes of opium on 157,000 hectares, accounting for over 90 percent

of some key aspects of the rural economy and staple food production in Afghanistan" (Kabul: Food and Agriculture Organization, 2002).

17 Food and Agriculture Organization of the United Nations, "Afghanistan's Agricultural prospects for the Year Ahead" (Kabul: Ministry of Agriculture, Irrigation and Livestock, 2006).

18 Liz Alden-Wiley, *Land Rights in Crisis: Restoring Land tenure security in Afghanistan* (Kabul: Afghanistan Research and Evaluation Unit, 2003).

19 Asian Development Bank, "Technical Assistance to the Islamic Republic of Afghanistan for Capacity-Building in Land Policy and Administration Reform" (Kabul: Asian Development Bank, 2004).

of global illicit opium production.²⁰ These figures are down from the historic high of 8,200 metric tons grown on 193,000 hectares in 2007. In addition, the number of opium free provinces increased from 13 to 18 over 2007. Ninety-eight percent of national production in 2008 was concentrated in seven provinces in the southwest. While the cultivation of opium poppy accounts for only two percent of agricultural land area in Afghanistan, its economic impact is much higher. The value of opium exports to neighbouring countries was roughly estimated to equal 36 percent of licit (non-drug) Gross Domestic Product (GDP) in 2005.²¹ Estimates suggest that 2.4 million Afghan farmers are involved in opium cultivation, equal to approximately ten percent of the population. An unknown number of other Afghans are involved in other aspects of the opium trade.

With the last inventory of irrigated areas dating back to 1967, there was little clear information available on irrigation at the outset of the WOL project. While much of the pre-war irrigation infrastructure (both traditional and modern) has survived the intermittent periods of turmoil, most has been subject to periods of neglect and abandonment, which has impaired its performance. Perhaps more significantly, there is evidence that shifting rural power relations may have affected the operation of traditional water management institutions, impacting how water is distributed.

Evidence suggests that in 2005, despite some progress toward rehabilitation, irrigation efficiency was running at about 50 percent of its potential.²² Significantly, according to a 2003 national survey, lack of irrigation water constituted the greatest constraint on farming.²³

20 United Nations Office on Drugs and Crime, "Afghanistan Opium Survey 2008" (Kabul: United Nations Office on Drugs and Crime, 2008).

21 William Byrd and Doris Buddenberg, "Afghanistan: Drug Industry and Counter-Narcotics Policy" (Washington: World Bank, 2008), Chapter 1.

22 Ministry of Irrigation, Water Resources and Environment, "Irrigation Policy" (Kabul: Transitional Islamic State of Afghanistan, 2004).

23 Almost a third of farmers (31 percent) cited lack of irrigation

Review of available data on natural resources management, agricultural production and rural livelihoods in the years since 2001 suggests that problems may exist with the available data itself, making it difficult to accurately assess conditions nationally. Nevertheless, while the exact parameters of change may remain unclear, the weight of evidence indicates that agricultural productivity has suffered from the combined impacts of conflict, drought and chronic institutional weakness in Afghanistan. When related to population growth over the same period, the relative decline of the agricultural sector raises issues for food security, labour markets and economic recovery. Policy initiatives post-2001 recognise the importance of agriculture to reconstruction and development, with the most recent being the approved Agriculture and Rural Development Sector Strategy in the Afghanistan National Development Strategy (2008) and the draft National Agriculture Development Framework (2009). The next section reviews these policy efforts to provide a framework for the WOL study findings and policy recommendations.

2.2 Strategic planning and policy making related to agriculture and rural development

Key Initiatives since 2001

Since the fall of the Taliban in 2001, several national strategic planning initiatives have been launched in Afghanistan. All have highlighted the importance of the agriculture sector in achieving economic growth, poverty alleviation and national security objectives. In addition to sections in national strategies focusing on agriculture, since 2005 the Ministry of Agriculture has prepared several iterations of a ministry Master Plan. Key agriculture strategy documents are listed in Table 2 over page, with brief notes on their current status.

For the purpose of understanding the current policy

water as their principal constraint on productivity. World Food Program Vulnerability Analysis and Mapping and Ministry of Rural Rehabilitation and Development, Vulnerability and Analysis Unit, Islamic Republic of Afghanistan. "National Risk Vulnerability Assessment," (Kabul: World Food Programme, 2003).

context, this report looks at the sector strategies in the 2008 ANDS and the 2009 National Agriculture Development Framework (NADF). Within the ANDS, the Agriculture and Rural Development Sector Strategy, Water Resources Sector Strategy and Counter Narcotics Strategy are particularly relevant for the WOL research agenda (hereafter these are referred to as ANDS/ARD, ANDS/WR, and ANDS/CN, respectively). A brief description of ANDS background and objectives follows to provide a better understanding of the context within which strategic plans and policies have evolved in Afghanistan since 2006. Two important points need to be briefly acknowledged: First, the policy context continues to evolve rapidly given intensive reconstruction and development efforts. The International Monetary Fund (IMF) and the World Bank have recommended the next steps for the ANDS, largely focused on a call for greater streamlining, prioritisation and links to poverty reduction.²⁴ Upon assuming leadership of MAIL in October 2008, the new Minister of Agriculture, H.E. Asif Rahimi (the former Deputy Minister of MRRD), immediately instigated the drafting of a new National Agriculture Development Framework building on the ANDS/ARD and MAIL Master Plan but with several significant differences. Presidential elections, scheduled for August 2009, open the possibility of new priorities and approaches that will shape ongoing strategic planning and policy dialogue. The summary of the policy context presented in this paper therefore represents a "snapshot" in time. New policy documents will undoubtedly introduce changes.

Second, strategy is ultimately determined not by what makes it onto the pages of approved documents, but by what programmes get funded and implemented. In Afghanistan this is largely determined by donors, particularly in the agriculture sector where external funding sources far exceed the amount of funds channelled through MAIL. The World Bank has noted that the expected cost of implementing the ANDS is likely double the amount of funds that the government can reasonably expect

24 International Monetary Fund, "Poverty Reduction Strategy Paper - Joint Staff Advisory Note." IMF-World Bank review findings and recommendations are described in more detail at the end of this section.

Table 2: Key Agriculture Strategy Documents Since 2002

Title	Date	Comments
<i>A Strategy for Agriculture and Livestock Development of Afghanistan</i>	2002	Falls under the third pillar of the National Development Framework: Physical Reconstruction and Natural Resources. Written in the immediate aftermath of the fall of the Taliban.
<i>A Policy and Strategy Framework for the Rehabilitation of Agriculture and Natural Resource Sector of Afghanistan</i>	January 2004	A component of "Securing Afghanistan's Future," funded by the Asian Development Bank. Approved June 2004.
<i>Ministry of Agriculture, Animal Husbandry, and Food (MAAHF) Master Plan</i>	2005	Prepared at the request of several donors to guide investments in the sector. Builds on the 2004 strategy listed above. Ministry staff were significantly involved in preparation.
<i>Afghanistan National Development Strategy (ANDS): Agriculture Strategy</i>	March 2007	Prepared by the Ministry of Agriculture, Irrigation, and Livestock. Subsequently replaced by the Agriculture and Rural Development Strategy in the final 2008 ANDS.
<i>MAIL Master Plan: Seven Programmes Implementation and Investment Plan</i>	September 2007	Builds on the 2005 Master Plan and a subsequent 10-page document entitled, "Restoring Afghanistan's Agricultural Economy: Seven Programmes for Success," prepared in October 2006. Subsequently replaced by the National Agriculture Development Framework in 2009.
<i>ANDS Agriculture and Rural Development Sector Strategy 1387-1391 (2008-2013)</i>	February 2008	Prepared jointly by MAIL and MRRD. The entire ANDS was approved by President Hamid Karzai and his Cabinet 21 April 2008 and submitted to the International Monetary Fund and World Bank as Afghanistan's Poverty Reduction Strategy Paper.
<i>National Agriculture Development Framework</i>	April 2009 (draft)	Prepared by MAIL. Consolidates the "Seven Programs" into four and strengthens linkages with poverty reduction objectives.

to receive from donors.²⁵ Thus, efforts are underway to further prioritise proposed programmes.

25 The total budget requirement of the ANDS is US\$50 billion over five years, of which more than US\$43 billion is expected to come from donors. The World Bank cautioned that this is double the amount that is reasonable to expect based on past trends. It also noted that the government's limited absorptive capacity poses a serious constraint to this level of expenditure execution. Donors subsequently pledged about \$20 billion for the implementation of the ANDS at the Paris Conference in mid-June 2008. Although additional commitments may be forthcoming, the unexpected downturn in the global economy that hit in the last quarter of 2008 is likely to constrain funding. (Sources: IMF and IDA, "Joint Staff Advisory Note on the Poverty Reduction Strategy Paper," 4); IMF, "Fourth Review Under the Three-Year Arrangement Under the Poverty Reduction and Growth Facility and Request for Waiver of Performance Criterion" (Washington DC: Middle East and Central Asia Department, 2008).

These two points highlight the limits of strategy documents but also suggest opportunities to support the ongoing policy dialogue and investment decisions. The difficult task of setting priorities calls for greater discussion of trade-offs and the potential impacts of proposed interventions. Evidence generated by the WOL study is particularly relevant and timely at this stage in Afghanistan's reconstruction and development efforts, given ongoing efforts to strengthen the pro-poor components of sector strategies, identify priorities and develop more detailed implementation approaches.

Afghanistan National Development Strategy

ANDS background

In early 2006, representatives of the Government of Afghanistan, the United Nations and the international community met at the London Conference on Afghanistan to establish a five-year framework for international cooperation with Afghanistan. The resulting Afghanistan Compact is a political commitment of the participants to work toward a series of agreed time-bound benchmarks for achieving Afghanistan's Millennium Development Goals (MDGs). These benchmarks were incorporated into the ANDS and its associated monitoring and evaluation (M&E) framework.

According to the United Nations Development Programme (UNDP), the main objective of the ANDS process was to "develop and implement a pro-poor strategy that will be costed, prioritised, sequenced and budgeted and that reflects a broad consensus on national and provincial priorities in order to fight poverty."²⁶ A second objective was for the Government of Afghanistan to qualify for debt relief under the IMF's Heavily Indebted Poor Countries (HIPC) Initiative, by meeting IMF requirements for a Poverty Reduction Strategy Paper (PRSP).²⁷ According to the IMF:

Poverty reduction strategies should be: country-driven, promoting national ownership of strategies through broad-based participation of civil society; results oriented and focused on outcomes that will benefit the poor; comprehensive in recognizing the multidimensional nature of poverty; partnership-oriented, involving coordinated participation of development partners (government, domestic stakeholders, and external donors); and based on a long-term

26 United Nations Development Program, "ANDS project summary," website updated December 2008, www.undp.org.af/WhoWeAre/UNDPinAfghanistan/Projects (accessed 26 April 2009).

27 Note that the April 2008 "Afghanistan National Development Strategy" and the May 2008 "Islamic Republic of Afghanistan Poverty Reduction Strategy Paper" refer to the same document. The first title is used within Afghanistan. The World Bank and IMF use both titles.

perspective for poverty reduction."²⁸

Following Cabinet approval of the ANDS in April 2008, the Government of Afghanistan submitted the ANDS to the World Bank and IMF for review. Simultaneously, it tasked MRRD with facilitating subnational presentations on the ANDS.

Below are selected highlights from the ANDS sector strategies and other key agriculture strategy documents, focusing on those that establish the current policy context for this study's findings and recommendations.

Strategy highlights related to agriculture and rural development

The government's primary strategy documents for agriculture and rural development are the February 2008 ANDS/ARD, prepared jointly by MAIL and MRRD, and the April 2009 draft National Agriculture Development Framework (NADF), prepared by MAIL.

The ANDS/ARD contains three central features: an emphasis on production for market, including through large-scale commercial agriculture, downplaying the importance of subsistence production; implementation via geographic targeting of support to agriculture and rural development zones (ARDZs) with high potential; and coordination through the Comprehensive Agriculture and Rural Development (CARD) initiative. It has five components: local governance, agricultural production, rural and agricultural infrastructure, economic regeneration and disaster and emergency preparedness.

The agricultural production and economic regeneration components of the strategy are the most market-oriented, with an interest in moving farmers out of subsistence production to intensive or specialised farming systems and shifting large land holdings to commercial agriculture, with the latter move designed to attract private sector investment from medium and large-scale agricultural producers and processors. The strategy states:

28 International Monetary Fund, "PRSP Fact Sheet," www.imf.org/external/NP/prsp/prsp.asp (website updated April 2009).

*The advantage of promoting large-scale commercial agriculture is that it is led by investors and entrepreneurs who bring substantial resources and market linkages and who are thus positioned to: (1) identify profitable opportunities; (2) expand access to quality inputs, technologies and markets; (3) lower costs through volume purchases; (4) lower risk through production contracts; (5) extend credit and extension services; (6) facilitate growth of local allied industries; and (7) provide quality control services. In addition, the promotion of large scale commercial agriculture creates jobs and raise incomes for the large number of small- and medium-scale rural producers, processors, traders and other enterprises. Large-scale agriculture enterprises also have a powerful demonstration effect that can encourage others to adopt more successful practices. Experience has shown that the development of local markets and farmers' ability to increase productivity and deliver their products to markets are key components in stimulating the investment in improved production and productivity, with resulting improvements in income generation. This will enable some subsistence farmers to transfer into semi-intensive/semi-specialised farming systems and thereby reduce dependency on opium production.*²⁹

The potential link between commercial agriculture and pro-poor growth is implied in the final sentence, as well as through the expectation that commercial agriculture can, and will, benefit a diverse range of rural residents, across farming scales. The ANDS/ARD tends to devalue subsistence production, viewing it as a source of poverty and vulnerability: "Subsistence or near-subsistence agriculture generates almost no income, perpetuates a cycle of rural poverty and leaves rural households extremely vulnerable to shocks."³⁰

Five agriculture and rural development zones have been identified centred on regional market

29 Islamic Republic of Afghanistan, "Agriculture and Rural Development Sector Strategy in the ANDS," (Kabul: Government of Afghanistan, 2008), 29.

30 Islamic Republic of Afghanistan, "Agriculture and Rural Development Sector Strategy in the ANDS," 29.

towns where the conditions for growth are most favourable (Mazar-i-Sharif, Kunduz, Kabul, Kandahar and Herat). The intent of the ANDS/ARD is to focus both public and private sector investment in these zones to ensure that critical infrastructure and services such as power, water, transportation, telecommunications, financial services, and vocational training programmes target these growth zones, thereby achieving synergy. In addition, competitive value chains will be targeted, working through the connector firms that drive these value chains. The strategy identifies vegetables, fruits and nuts, livestock and fodder production as high potential products. A potential link between this approach of concentrating interventions in priority agriculture zones and pro-poor growth is implied in the commitment to "develop plans to extend the reach of agricultural zones into more remote rural areas," although it also suggests that they will have to wait their turn. Given the prevalence of remote rural villages, this prioritisation is problematic; the National Agriculture Development Framework reverses this and aims to include areas with high growth potential and those facing challenges to access.

CARD is described as an inter-ministerial coordination mechanism that will operate at national, provincial and district levels to implement the ANDS/ARD. It is also described as "a series of programs designed to support the poorest and most vulnerable segments of rural society". Fifteen programmes are listed including six of the seven programmes in the MAIL Master Plan and MRRD's key programmes.³¹ The National Solidarity Program (NSP) is listed as CARD's principal program, presumably because the 21,767³² Community Development Councils (CDCs) established under NSP are expected to be the main point of contact for community level development

31 MAIL programmes: food security, horticulture, livestock, irrigation infrastructure, natural resources management, and capacity building (omits policy). MRRD programmes: National Solidarity Program, National Area Based Development, National Rural Access, Rural Water Supply and Sanitation, National Surveillance System, National Rural Enterprise Development, rural electrification, and emergency response.

32 National Solidarity Programme, "NSP Results: Main Output Indicators and Achievements as of 30th Jada 1387 (19th January 2009)," http://www.nspafghanistan.org/reports_and_publications.shtm (accessed June 2009).

assistance from line ministries and donor-funded projects. The CARD concept has reportedly been more fully developed since the ANDS/ARD was drafted.

Common components of most agriculture policy documents are: support for farmers' organisations and introduction of new, low-cost technologies to help subsistence farmers diversify crop and livestock production; improvement of food security; and, ideally, moves into semi-intensive production in areas where there is a well-defined market. Potential activities include vegetable gardens, small fruit orchards, livestock improvement, backyard poultry production, extensive sheep and goat rearing, wool processing, cashmere collection and processing and expansion of the fully privatised system of Veterinary Field Units (VFUs).

Where semi-intensive or semi-specialised agriculture is possible, support will aim to expand livestock production and productivity and promote horticulture exports. High-potential subsectors to focus on include dairy (through breeding programmes, feed mills, milk collection schemes), a vertically integrated commercial poultry enterprise with links to backyard poultry producers (through quality-controlled parent stock and feed mills, hatcheries, and layer or broiler units), wool and cashmere fibres (through breeding programmes, winter feeding, feed-lot development, slaughterhouses, rangeland mapping, and pasture management), and fruit (through orchard establishment, processing, and packaging).

The arrival of a new Minister of Agriculture in October 2008 prompted a review of recent strategy and preparation of the NADF, which sought to revise and simplify both MAIL's component of the joint MAIL-MRRD ANDS/ARD and the earlier Master Plan. Many of the specific interventions proposed in the ANDS/ARD have carried over to the new framework. However, the April 2009 draft NADF seems to provide more specifics supporting pro-poor intent than the ANDS/ARD. The latter, as in the overall ANDS document, tends to be rhetorically pro-poor without providing specifics in line with this commitment.³³

33 Paula Kantor, Adam Pain et al, *Delivering on Poverty Reduction:*

The new framework commits to a bottom-up, inclusive, sector-wide approach.

*The programme will work with a broad range of stakeholders involved in the various stages of agricultural value chains, including producer organizations of various sizes (micro-enterprises, SMEs and larger companies), as well as investors, processors, traders, and buyers.*³⁴

Middle-scale farmers (defined as farmers who own one to 50 hectares of irrigated land) are seen as the "backbone for sustainable growth in agriculture," based on evidence that they currently produce 80-90 percent of the country's agriculture output and that the potential for large-scale commercial agriculture in Afghanistan is limited due to geographic constraints in most provinces.³⁵

There appears to be greater specific concern for equity, or at least achieving a broad distribution of benefits. Several statements commit the government to ensuring that marginalised, vulnerable and otherwise disadvantaged groups benefit from rural development initiatives, including *kuchis* (nomad pastoralists),³⁶ women, and households in remote, resource-poor and rainfed areas. The framework also highlights the importance of job creation for rural poverty alleviation, particularly for the landless and small-scale farmers.

References to concentrating support in favourable areas (near regional markets) have been removed.

Focusing ANDS Implementation on Poor Pro Outcomes, (Kabul: Afghanistan Research and Evaluation Unit, 2009).

34 Islamic Republic of Afghanistan, "National Agriculture Development Framework: Economic Regeneration Programme" (Kabul: Government of Afghanistan, 2008), 6.

35 Islamic Republic of Afghanistan, "Economic Regeneration Programme," 9.

36 The Kuchi Support Program in the NADF recognises that different strategies may be needed for different *kuchi* livelihood systems in light of the trend observed among *kuchis* in the East, West and North of Afghanistan toward less migration and semi-settlement. It therefore distinguishes between *kuchis* who continue to migrate and practice livestock-based livelihood system, and *kuchis* who are semi-settled and practice a more diverse livelihood system. Of those who migrate, it also distinguishes between *kuchis* who travel long distances across province boundaries, and those who travel short distances.

There is no language that suggests that more difficult, remote areas will be treated as a lower priority. Instead, the new framework refers to Afghanistan's seven agro-ecological zones, using them as a guide to help define opportunities and constraints to supporting rural livelihoods, subsequently promoting tailored interventions. As before, criteria for prioritising interventions within regions will consider ecological, physical infrastructure and social factors.

At the programme and sub-programme level, some notable differences, particularly between the ANDS/ARD strategy, the MAIL Master Plan, and the NADF, include a stronger emphasis on: the links between natural resource management, agricultural production and economic regeneration to achieve food security and economic growth; increasing cereal yields in response to the food security crisis, particularly wheat (Afghanistan's primary staple food crop); promoting oilseeds and other industrial crops, particularly those that can be used for livestock feed; supporting the livestock sector in general; promoting improved natural resources management; facilitating diversification and other strategies to reduce farmer risk; and expanding access to agricultural credit. In addition, a high priority is assigned to accelerating organisational transformation and capacity building within MAIL at both central and provincial levels, in accordance with appropriate public sector roles.

Strategy highlights related to land registration

The government has committed to implementing measures to facilitate access to land by clarifying property rights, simplifying procedures for the transfer of titles and allowing for longer-term leases. In 2007, a draft National Land Policy was submitted to the Ministry of Justice for approval and efforts are underway to improve the legal framework for land registration and settlement of land disputes, including developing a community-based land administration system.³⁷

³⁷ Land registration is addressed in the "Governance, Public Administration, and Human Rights Strategy" under the "Good Governance" Pillar of the ANDS.

Strategy highlights related to water resources management

The government is moving toward an Integrated Water Resources Management (IWRM) approach based on five main river basins. This is a significant change in institutional arrangements. Historically, responsibility for water management has been fragmented (spread across multiple line ministries with competing claims) and assigned based on administrative boundaries rather than natural boundaries.

Eventually, river basin organisations will be established for each basin and responsibility for water resources management will be devolved accordingly, possibly to the sub-basin level. A pilot project is currently being implemented to develop this approach in the Amu Darya River Basin. Further devolution of responsibility to Water Users Associations (WUAs) is also envisaged. In the meantime, planning and implementation is centralised in Kabul. A Supreme Council for Water Affairs Management (SCWAM) and an associated Technical Secretariat have been established to promote inter-ministerial and donor coordination.

The ANDS/WRM identifies the 2006 "Strategic Policy Framework for the Water Sector," approved by the SCWAM, as the government's main water policy document.³⁸ This framework does not contain detailed policies but rather sets the general direction for further development of policies and regulations. A revised Water Law³⁹ was submitted for review in June 2008 and four draft regulations have been developed related to river basin organisations (councils and agencies), WUAs, and permits and licences. Other forthcoming policies and regulations will focus on irrigation, groundwater, hydropower development and urban and rural domestic water supply and sanitation.

³⁸ Ministry of Energy and Water, Islamic Republic of Afghanistan, "Afghanistan National Development Strategy: Water Resource Management Sector Strategy" (Kabul: Ministry of Energy and Water, 2008).

³⁹ References to the Draft Water Law in this paper are based on an unofficial, partial translation prepared by FAO in January 2009.

The ANDS/WRM notes that “WUAs will, in many regions of the country, supplant the traditional governance mechanisms which have long since become dysfunctional.” This refers to *mirabs*, water masters elected by farmers (typically from the downstream end) to organise labour for canal maintenance, oversee water allocation and use and serve as a liaison with government officials. It later clarifies that traditional systems that are functioning properly will be strengthened and legally recognised. Where necessary, new WUAs will be established.

The ANDS/WRM identifies several important water policy goals related to rural livelihoods. Examples include promoting effective mechanisms for stakeholder participation in water resources management and planning, balancing competing water uses (irrigation for food and industrial crops, domestic supply, sanitation, industry, flood control, hydropower and the environment), promoting equitable allocation between water users (particularly between upstream and downstream users and improving women’s access to water) and developing mechanisms for conflict resolution. Most of the supporting policies and implementation approaches have yet to be developed or finalised.

The strategy seeks to promote a “livelihoods-centred IWRM approach” that emphasises poverty reduction. Although not explicit, the strategy appears to distinguish between charging for *water*, and charging for water delivery *services* to recover the costs of infrastructure construction or rehabilitation and operations and maintenance (O&M). This interpretation is consistent with the draft Water Law, which states, “Water is free, but the cost of investment and provision of services relating to supply, delivery, storage, diversion, treatment, operation and maintenance can be charged by the service provider” (Article 7). All explicit references to water pricing found in earlier strategy drafts have been omitted, but it retains the long-term objective of “full cost recovery of water services from water users.” This last provision sets the stage for possible private sector participation in irrigation schemes and O&M services.

The ANDS/WRM and the draft Water Law (Article

2) note that water is a “public good” and “public property,” respectively. Although this precludes “private ownership,” private water rights are provided for through a system of permits and licences that will regulate ground water and surface water use (Article 21). Water users will be required to install gauges to measure water withdrawals and wastewater discharges (Article 22). Existing customary water rights will gradually be recognised with permits (Article 20). Once established, WUAs will be responsible for overseeing water allocation and distribution within their canal system. If they prefer, they may delegate this responsibility to a *mirab* (Article 23). WUA roles, responsibilities and authority will be regulated by a WUA charter. It is not clear if there will be a single charter for all WUAs, or if WUAs will have some flexibility in crafting their own charter (Article 18).

Responsibility for dispute resolution follows a bottom-up approach, whereby local disputes are first presented to the WUA and raised to higher governance bodies only as needed. These include the sub-basin council, river basin council, Ministry of Energy and Water (MEW) and the court system. In areas where WUAs and councils do not yet exist, disputes will be resolved by the river basin agency or water management office (which seems to imply the provincial MEW office) (Article 34).

In addition to the water policy documents already described, the 2009 NADF includes an irrigation subprogramme. Consistent with Article 11 of the draft Water Law, MAIL will coordinate rehabilitation of water catchment and delivery infrastructure such as primary, secondary and tertiary canals, intakes, water control structures and check dams. MAIL is also responsible for overseeing the establishment of WUAs and facilitating their participation in planning processes related to irrigation infrastructure improvements. MEW is responsible for registering WUAs and coordinating WUA capacity building efforts (Article 18).

A national mapping exercise on the current status of irrigation infrastructure is proposed, with the purpose of identifying rehabilitation priorities. In addition, MAIL proposes establishing a Coordination Unit within the ministry that will support a

coordinating body representing relevant ministries, donors and implementing partners.

Strategy highlights related to counter-narcotics

The ANDS/CN largely reflects the 2006 National Drug Control Strategy (NDCS),⁴⁰ which is organised around four priorities: 1) disrupting the trade in illicit drugs and precursor materials; 2) strengthening and diversifying licit rural livelihoods; 3) reducing demand for illicit drugs; and 4) strengthening central and provincial state institutions. The ANDS states:

*The goal is to ensure a rapid and sustainable decrease in cultivation, production, trafficking and consumption of illicit drugs with a view to complete and sustainable elimination of narcotics by providing a conducive development environment and opportunities while taking requisite direct action.*⁴¹

Efforts to disrupt the drug trade will target drug traffickers, their backers (particularly the Taliban and corrupt officials) and large poppy growers. The NDCS notes that the government's counter-narcotics policy is not "eradication-led." However, it recognises that the threat of eradication (the destruction of opium poppies) will therefore be carried out under the following conditions: conducted in areas where sufficient opportunities for licit livelihoods exist; ideally conducted prior to flowering and not where poppy has already been lanced; and delivered by ground-based means. In addition, no compensation is given to those whose poppy fields have been eradicated. Priority target areas for eradication in each province will be identified by the Ministry of Counter Narcotics each year and submitted to a cross-ministerial group for approval. In practice, a significant share of eradication is conducted outside eradication target zones (particularly in Helmand and Kandahar

40 Ministry of Counter Narcotics, Islamic Republic of Afghanistan, "National Drug Control Strategy: An Updated Five-Year Strategy for Tackling the Illicit Drug Problem," (Kabul: Ministry of Counter Narcotics, 2006).

41 Islamic Republic of Afghanistan, "ANDS: A Strategy for Security, Governance, Economic Growth & Poverty Reduction 1389-1391 (2008-2013)" (Washington: International Monetary Fund, 2008), 146.

in 2008).⁴² The MCN Poppy Elimination Programme (PEP) will deploy teams tasked with: implementing an information campaign to persuade farmers to not plant poppy; verifying that reported eradication has been carried out; and ensuring that it has been targeted where legal livelihood opportunities exist. Mechanisms to evaluate and monitor opportunities for licit livelihoods will be developed to support this targeting policy.

Other efforts to disrupt the drug trade focus on reducing corruption and building the government's capacities related to intelligence, investigation, cross-border cooperation and interdiction (arresting and prosecuting international drug dealers and traffickers and corrupt government officials, preventing the import of precursor chemicals used in opium processing and targeting illicit financial flows).

The 2008 ANDS/CN has a stronger emphasis on eradication than the 2006 NDCS, stating that the government will increase its eradication efforts. The Policy Action Group (PAG) established a target to eradicate 50,000 hectares in 2008 (25 percent of the total area under cultivation in 2007). This target will be continued as far as possible for successive years.⁴³ The strategy notes several trade-offs between rapid annihilation and phased eradication approaches and indicates that there are advocates for both approaches, but does not provide specific guidance beyond the annual target and the statement, "the issue is not whether elimination of narcotics needs to be gradual or rapid, but what has the least negative social impact and will be

42 The UNODC Afghanistan Opium Survey 2008 indicates that 92 percent of the hectares eradicated in Kandahar (1,125 of 1,222 hectares) and 45 percent of the hectares eradicated in Helmand (636 of 1,416 hectares) were outside eradication target zones.

43 The UNODC Afghanistan Opium Survey 2008 reports that eradication was conducted on 5,480 hectares in 2008, equivalent to 11 percent of the target and one-fourth of the number of hectares eradicated in 2007. Possible reasons for this are: 1) poppy reductions occurred through other means, including not planting, crop failure due to a harsh winter, and voluntary or forced self-eradication by poppy farmers (3,000-4,000 hectares reported but not verified); and 2) the concentration of poppy production in the South, where eradication is becoming increasingly difficult due to a rise in the number of attacks by anti-government elements and organised criminal networks.

sustainable.”⁴⁴ In light of plans announced in late 2008 to increase ISAF troops to help disrupt the opium trade in the South and planned revision of the NDCS (scheduled for 2008 but apparently delayed), it seems likely that eradication policy will be under review in 2009.

Support for helping poppy farmers transition to legal livelihoods includes both quick-impact and medium- to long-term interventions. These include cash-for-work programmes and other social protection measures; rehabilitation of roads and irrigation infrastructure; improving access to credit to break the cycle of opium debt; and improving production and marketing of licit crops. Under the government’s “Good Performers Initiative” (GPI), provinces that are poppy free, nearly poppy free (less than 1,000 hectares of poppy production) or “have reduced poppy production more than 10 percent” are eligible for additional development funds.⁴⁵ The ANDS/CN also indicates that large-scale assistance will be provided in follow up to eradication.

There appears to be broad consensus on the importance of mainstreaming counter-narcotics efforts rather than isolating it from development initiatives. Counter-narcotics is treated as a cross-cutting theme in the ANDS/CN (along with capacity building, gender equity, regional cooperation, anti-corruption, and environment) and MCN has prepared a Counter Narcotics Mainstreaming Policy that identifies mechanisms for inter-ministerial coordination and reporting.

The ANDS/CN also emphasises a provincial-based approach. Provincial governors will coordinate preparation of provincial counter-narcotics action plans, prepared in consultation with local

44 Ministry of Counter Narcotics, Islamic Republic of Afghanistan, “ANDS Counter Narcotics Strategy” (Kabul: Ministry of Counter Narcotics, 2008), 1.

45 Poppy free provinces are eligible for \$1 million each. Provinces that have reduced poppy production are eligible for \$1,000 per hectare above ten percent of total cultivation. Provinces that are nearly poppy free are eligible for \$500,000. In 2008, the United States was the sole funder of the GPI. Source: U.S. Department of State, “State Releases Update on Counternarcotics in Afghanistan,” (Washington, D.C., 28 August 2008), www.america.gov (last accessed 13 May 2009).

stakeholders and tailored to local conditions. These will be incorporated into Provincial Development Plans (PDPs) and annual NDCS Implementation Plans. The ANDS/CN recommends that donors periodically review and adjust their alternative development projects to reflect PDP priorities. Similarly, the government-managed Counter Narcotics Trust Fund has recently shifted from funding ad hoc proposals to funding provincial counter-narcotics action plans. Governors and central government officials will be held accountable for achieving agreed targets and a transparent system of reward and punishment will be established for this purpose.

The ANDS/CN includes the surprising statement, “The UNODC has concluded that poverty is not the major driving force behind poppy production, as is greatly believed.”⁴⁶ This conclusion is based on UNODC findings which show that poorer provinces in the North have either significantly reduced or ceased poppy production, while wealthier provinces in the South have significantly increased poppy production. The implication is that poverty should not be used as an excuse to avoid taking action. However, the ANDS/CN also recognises that “the relationship between poverty and counter narcotics is not as simple as it appears”; that eradication can have a poverty-inducing effect in the short-term that will most affect the farmers and labourers involved in poppy cultivation and their families; and that “poverty and vulnerability” will need to be addressed in any counter-narcotics strategy.⁴⁷ These statements indicate a need to clarify the relationship between poverty reduction and poppy production and identify effective strategies for minimising the negative impacts of counter-narcotics measures.

With respect to monitoring, the NDCS notes that tracking annual reductions in the number of hectares cultivated is an important measure of progress, but has several drawbacks.

Focusing on cultivation levels tell us little about the sustainability of any decrease in

46 MCN, “ANDS Counter Narcotics Strategy,” 1.

47 MCN, “ANDS Counter Narcotics Strategy,” 1-2.

*cultivation and tends to obscure the complexity and implications of differing cultivation patterns within and between provinces. Thus it fails to identify problems associated with very rapid or uneven decreases in cultivation, be they through self-restraint or eradication. Furthermore, given the current possibility that stockpiles continue to exist, the 2005 recovery in yield/hectare, and the fact that reduced supply can push prices up, near-term reductions in cultivation levels are unlikely to affect the activities of those involved in trafficking.*⁴⁸

Although this statement was intended to highlight important challenges to measuring progress, it also suggests several important questions for designing counter-narcotics interventions that produce sustainable cultivation declines. In the NDCS, the government has sought to address the shortfalls in the “opium area” indicator by supplementing it with indicators that measure “sustainable reduction in the relative value of the opium economy vis-à-vis licit gross domestic product (GDP); reduction in trafficking of illicit drugs and precursor chemicals; and reduction in the number of problem drug users and drug-related harm in Afghanistan.” The ANDS/CN proposes some additional results indicators and notes that indicators will be further developed and finalised in workshops. Questions about counter-narcotic success, as well as about the links between opium poppy cultivation and poverty, lie at the core of AREU’s research on the opium economy and will be revisited in the sections on findings and recommendations.

World Bank and IMF comments on the ANDS

As mentioned earlier, the government submitted the ANDS as its Poverty Reduction Strategy Paper to the World Bank and IMF for review in May 2008, in accordance with the process for obtaining debt relief. In June 2008, the World Bank and IMF prepared a Joint Staff Advisory Note on the ANDS and submitted its findings to the Executive Boards of the two institutions.⁴⁹ Selected findings and

recommendations are summarised below because they will likely influence the ongoing strategic planning agenda in Afghanistan.

The joint review team found the ANDS to be comprehensive, informed by a quality poverty analysis and based on a consultative process. However, it recommended the following general improvements: stronger links between evidence on correlates of poverty and vulnerability in Afghanistan and proposed strategies; greater prioritisation of actions and projects across and within sector strategies (including a discussion of trade-offs); a more detailed road map for how objectives will be achieved; and a more streamlined M&E framework.

The World Bank-IMF review team agreed with “the overall vision and strategy for Agriculture and Rural Development (ARD), including the transformation of the agricultural sector to become more productive and commercially oriented.” It made five recommendations: strengthen the links between proposed programmes and poverty reduction objectives; prioritise the 15 programmes under CARD in light of medium-term targets and funding constraints; clarify future support for CDCs and their respective roles in implementing CARD programmes; implement the development zone approach on a pilot basis in one or two regions, and place greater emphasis on food security given recent sharp increases in global food prices.

The review team commended several aspects of the Water and Irrigation Sector Strategy, including the integrated river basin approach and emphasis on expanding the irrigation rehabilitation program in the short-term, capacity building and improved information collection for trans-boundary water resources management. It recommended that new irrigation and hydropower projects be carefully assessed to optimise the use of water resources.

The review team found that the government’s National Drug Control Strategy (NDCS) presents a “multi-faceted, balanced approach.” However, the team voiced concern about the potential adverse impacts on poverty and corruption and emphasised that phasing out opium in Afghanistan will require

48 Islamic Republic of Afghanistan, “National Drug Control Strategy,” 26.

49 IMF, “Islamic Republic of Afghanistan: Poverty Reduction Strategy Paper – Joint Staff Advisory Note.”

a long-term effort. The review team recommended that the following issues be more carefully considered and reflected in implementation approaches:

(i) the impact of drug-related corruption on state-building and good governance (discussed in the ANDS), and the need to focus law enforcement efforts on important actors in the drug industry and their sponsors inside and outside government; (ii) the impact of different counter-narcotics measures on the economy and poverty, which, for example, has implications for how to approach eradication of opium poppy fields; and (iii) the need for scaled-up, effective rural development programs to facilitate the rural population's shift away from opium to licit economic activities.⁵⁰

2.3 Conclusion

This section reviewed key policy and strategy documents related to agriculture and rural development in the post-2001 period. It focused

most specifically on the ANDS and its relevant sector strategies, as well as the MAIL Master Plan and newly drafted NADF. This review highlights existing policy positions and remaining gaps or inconsistencies. Key features of the agriculture policy landscape include a private-sector led, market-based orientation that can downplay the importance of subsistence production; differences in attention to regions with less potential, defined by remoteness and poor market access; a focus on livestock and horticulture value chains and their export-orientation; attention to local institutional structures particularly around land and water management; recognition that water is a public good but that service provision can be priced; contradictory positions on how poverty and opium poppy production are related; and interest in better measures of counter-narcotics success. The next sections summarise research findings from the WOL study, illustrating how the rural economy functions and identifying from this evidence several potential pro-poor interventions. The aim is to bring more nuance and specificity to the existing pro-poor rhetoric of agriculture and rural development policy debates.



Opium resin being extracted from an opium poppy in Nangarhar (David Mansfield)

⁵⁰ International Monetary Fund, "Islamic Republic of Afghanistan: Poverty Reduction Strategy Paper - Joint Staff Advisory Note," 10.

3. Key Findings

This section summarises key findings of the WOL study related to rural livelihoods, land tenure, water management, livestock and the opium economy, respectively. It highlights the implications of evidence from the field for policy, noting if the policies described in the previously reviewed strategy documents are supported by the evidence or if any potential policy gaps warrant greater attention.

Given the stated commitment of the government to pursue an inclusive, balanced agriculture strategy and ongoing efforts within MAIL to work out the details related to policy, implementation approaches and results indicators, these research findings on rural livelihoods are particularly timely and relevant.

3.1 General findings on rural livelihoods

The findings of WOL research validate a holistic “farmingsystems” approach to exploring agricultural production and rural livelihoods. This integrated approach focuses on important relationships and linkages between farmer access to different natural resources, agricultural strategies and livelihoods. It places decision-making within a broader environment of opportunity, risks and institutions. The approach highlights trade-offs within farming strategies—for example, the allocation of labour away from the farm to produce monetary incomes or sustain important socioeconomic relationships—and re-allocation of natural resources between different elements of the farm system. The new NADF recognises these inter-linkages, through its attention to the connections between the natural resource base, agricultural production and economic development.

Exposure to risk and the lack of means to cope with it perpetuate poverty and vulnerability. Avoiding risk causes households to forfeit opportunities that might offer routes out of poverty. “Risk”

takes many forms for rural households, including drought, harsh winters, price fluctuations, pest and disease outbreaks and a death within the family. It also includes the exercise of power in arbitrary and unaccountable ways by government or non-state actors (such as drug lords) that directly harms the poor and exacerbates inequalities.

Farmer behaviour and rural livelihoods are innovative and dynamic, with households constantly seeking new ways and better combinations of activities to achieve livelihood goals, mitigate risks and take advantage of available opportunities. The study provides evidence of farmers changing cropping and production strategies from one year to the next, or moving out of agriculture completely. It also illustrates innovation and adaptation both among and within farming communities and at the intra-household level, with members realigning themselves in different ways at different times. Data indicates a strong subsistence orientation in irrigated farming, reflecting an aversion to risk in a high-risk production environment. Farmers commonly prioritise cultivating food crops to meet their household requirements and minimise the need to purchase food. However, few households have access to the resources needed to be self-sufficient. Most need to generate cash incomes for purchases by cultivating a high-value crop, selling livestock products or engaging in off-farm wage labour. Most Afghan farmers practice a diversification strategy.

Specialised production for market supply is uncommon among farmers involved in the WOL study and is normally associated with high risks. Commercial agriculture is sometimes practiced by wealthy farmers with sufficient natural, financial and social resources to survive crop failure or the collapse of market prices. Only under these conditions do farmers appear confident to practice “income-maximising” behaviour. At the other extreme, households under conditions of severe resource scarcity may be pushed to produce for the market if they cannot produce sufficient food to meet their requirements with available resources.

In Afghanistan, this often takes the form of poppy cultivation.

WOL data suggests that while there are spectrums of livelihood security and vulnerability across all forms of agricultural production, those dependent upon rainfed agriculture are the most vulnerable of the agro-ecological groups investigated. Other significant factors increasing livelihood insecurity include remote locations, poor access to off-farm employment, low crop diversity and high-risk agriculture. Nonetheless, findings suggest that nearly all the rural households studied risked dietary deficiencies.

Household monitoring data shows that while there is almost universal access to waged labour opportunities, the best opportunities and highest incomes are associated with households in lower catchment river valleys. Households in irrigated river valleys receive approximately 30 percent more income from employment than rainfed farm households. In more marginal and remote areas, income opportunities are dominated by irregular, low-paying and unskilled agricultural jobs with related implications for household security. More remote farming households are faced with heavy on-farm labour demands and limited capacity to engage substitute labour. These inequalities are doubtless in some part related to physical location and access, but it is also probable that they reflect underlying asymmetries in education or political and economic connections.

One of the major findings emerging from the research is evidence of systemic inequities that shape access to resources and livelihood opportunities in rural Afghanistan. The reasons for these inequalities are complex. Households and communities may be disadvantaged by their physical location and agro-ecological context, or marginalised by their ethnicity, political affiliations or socioeconomic status. Of particular significance is the role of customary and informal rural institutions that determine access to important natural resources. These institutions tend to reflect local structures of power and wealth, and perpetuate or even exacerbate inequality of opportunity. This is well illustrated by the customary mechanisms regulating

access to both land and water. These inequalities determine how different sections of the rural population may be able to respond to opportunities for agricultural growth, and how the benefits of that growth may be distributed.

Evidence from land and irrigation case studies further show that community systems of resource management may be least effective where resources are scarce, and highly contested and vital interests are at stake. This raises the issue of whether community-based management can be initiated universally, whether it is more relevant to certain management situations than others, and what initial conditions are required. WOL findings suggest that reform and empowerment of community natural resource management institutions must be a key strategy for addressing the structural inequities that perpetuate rural poverty and insecurity. However, given the observed performance of informal institutions in natural resources management, it is clear that the delegation of resource management responsibilities will need to occur within a framework of strengthened governance, accountability and oversight.

The ANDS/ARD emphasised intensive or specialised semi-commercial agriculture, horticulture, and large-scale commercial agriculture, where appropriate. It also suggested concentrating support for agriculture development in growth zones near (or accessible to) regional market centres. The 2009 NADF reduces the emphasis on commercial agriculture, focuses on horticulture and livestock but also on cereals, and drops references to growth zones to achieve a more balanced, inclusive strategy. These changes are supported by evidence on how the benefits of this kind of agricultural growth would be distributed. WOL research suggests that growth in horticultural production with a strong export orientation will primarily benefit farmers with preferential access to irrigation water, and so economic growth will initially be spatially clustered in areas that are already comparatively prosperous. Even where horticultural production is stimulated outside of prime irrigated lands, a significant proportion of the benefits will be directed back to landowners and patrons because of the high incidence of sharecropping in those areas. If support

for agribusiness is solely focused on the populated river valleys, there is a strong possibility that communities in marginalised outlying areas will not share the same level of access to new employment opportunities. Although labour is mobile in accessing off-farm opportunities, this incurs opportunity costs. Furthermore, the concentration of agricultural development in areas that already enjoy greater access to economic opportunities and resources will contribute little to the goals of reducing poppy cultivation where farmers have few livelihood alternatives and increasing stability.

The NADF places greater emphasis on support for subsistence agriculture and food security than the ANDS/ARD. Like the ANDS/ARD it seeks to help subsistence farmers move into semi-commercial or semi-specialised agriculture to raise incomes. However, it recognises that this will not be possible for many farmers. It also recognises the importance of diversification in managing risk during the transition to more market-oriented production. WOL research supports this policy and highlights the importance of understanding the conditions under which a shift to greater commercialisation will strengthen a household's livelihood security, instead of weakening it. Subsistence agriculture focusing on food crops represents an economically efficient allocation of household resources when the value of household savings equals or exceeds the income that could be earned from commercial crops or other livelihood options. This occurs when opportunities to earn income are constrained by the factors listed earlier, particularly remoteness, size of land holdings and lack of access to markets. In addition, a high level of food self-sufficiency in remote areas is a good use of natural resources that would otherwise be under-utilised.

In general, the NADF seems to place greater emphasis on support for small-scale farmers and disadvantaged groups, subsistence and semi-commercial agriculture and food security than the ANDS/ARD. These significant changes in official agriculture policy are consistent with evidence from the field of the need for a more holistic view of agriculture as both a form of livelihood and a means of production.

3.2 Key findings on land tenure

In Afghanistan, few if any farmers hold an official title to the land they occupy. Nearly all transactions and adjudications are undertaken within the customary system, which appears to function quite effectively within communities, especially with respect to private land holdings. Under this system, farmers access land under diverse forms of tenure with different associated terms and levels of risk.

Major challenges exist in establishing the formal registration of land title in Afghanistan. There is very little useable information on land holdings, little capacity to gather it, and the prevailing uncertainties and ambiguities surrounding land ownership make it difficult to determine final title. However, Afghanistan could learn much from other countries that have confronted the problem of land registration in post-conflict situations.

Fragmentation of private land holdings and growing pressure on land resources everywhere is a significant production constraint. Among farmers in the WOL household monitoring study, there are significant differences in the size of land holdings under different systems of production. At some research sites, per capita land holdings are clearly insufficient to sustain livelihoods under licit cropping without supplementary incomes. This constraint pushes farmers to diversify their livelihoods and may make cultivation of opium an attractive option.

WOL research indicates that between a quarter and a third of all cultivated land at the research sites is managed under some form of temporary use agreement. These subordinate forms of tenure (particularly sharecropping agreements) tend to be concentrated in areas with potential for the cultivation of high-value cash crops. While sharecropping terms seem to favour farmers on low-value land, sharecropping on high-value land directs the largest proportion of the income back to landowners. This finding is of particular importance in understanding who benefits from growth in the horticulture subsector.

Common property land resources are of particular value to the resource poor. While disputes over these resources are less common than those over private land, they more frequently involve actors external to customary management systems and are consequently less easily addressed by informal institutions.

3.3 Key findings on water management

The WOL research on water resources management largely focused on community-based systems for managing irrigation infrastructure and water for agriculture. The supply of irrigation water impacts directly upon on-farm diversification, food security, entry into agricultural markets and prospects for sustainable licit livelihoods.

Findings on access to irrigation water

WOL research found that farmers in upper and lower catchments face different types of problems in accessing water and that they employ different types of strategies to deal with these. Upper catchments are characterised by high variability in irrigation flows. Consequently, farmers of upper catchment semi-irrigated sites draw opportunistically upon a diverse portfolio of water sources, including long and short *karez*, wells, surface springs, tertiary canals, water harvesting and snow pits. Even so, very few achieve a summer crop. By contrast, lower catchment farmers are more heavily reliant on a single source of irrigation water (tertiary canals) with only occasional recourse to other sources. This might reflect the relative permanence and reliability of canal flows in river valleys. These different strategies give rise to the distinct forms of irrigation management identified through the first year of WOL studies.

Owing to both the hydraulic attributes of irrigation structures and the way in which water resources are managed, farmers in the lower catchment irrigation systems face systemic inequities in the availability of water. Water scarcity at the tail end of canals limits the possibilities for high crop diversity and cash crops and results in reduced yields for other types of crops. Tail-end farmers are largely restricted

to growing cereal crops. Consequently, agricultural opportunity and livelihood security generally decreases along the length of irrigation systems and river basins, with downstream farmers severely disadvantaged. Water scarcity is exacerbated by the state of irrigation infrastructure in Afghanistan, which is estimated by MAIL to operate at roughly half its potential efficiency (on average) due to lack of maintenance and improper design.

In addition, downstream farmers typically have higher labour contributions for infrastructure maintenance than upstream farmers. Maintenance activities frequently begin at the tail end of the canal. Tail-end communities may be required to contribute labour to all upstream sections while upstream communities are not obligated (or cannot be persuaded) to help maintain downstream sections of the canal because they have no stake in them.

The degree of access to water is reportedly reflected in taxes on agricultural land and land prices. According to one informant in an AREU case study, three land tax categories exist corresponding with head-end, mid-stream, and tail-end land, with upstream farmers paying the highest land tax. In addition, where water rights and land ownership are linked, land prices reflect water rights.⁵¹ Both practices have implications for possible attempts to alter the existing allocation of water to promote a more equitable allocation of water between water users.

Findings on community-based water management systems

The general principles of water management are similar across Afghanistan; however, there is considerable regional variation in practices reflecting differences in local cultures and resource conditions. The study found that large and complex lower catchment irrigation systems appear most susceptible to structural and social inequities in water allocation. The traditional *mirab* system, found widely in these lower catchments, does not

51 Kai Wegerich, *Water Strategy Meets Local Reality* (Kabul: Afghanistan Research and Evaluation Unit, 2009), 49.

have the capacity or authority to resolve inequitable situations and may indeed simply institutionalise local power relations. *Mirabs* vary significantly with respect to leadership, conflict resolution, community mobilisation and advocacy skills. The reputation of the *mirab* as a committed and honest broker is paramount for gaining community trust and cooperation. However, no *mirab* is immune to interference from more powerful external actors.⁵²

Observations developed during the course of this study suggest that while traditional water management systems can be effective in regulating water use under conditions of normal water availability, they have limited capacity to address severe scarcity. Ultimately, a community's capacity to meet the irrigation needs of farmers depends on the flow entering its secondary canals. Reductions and reallocations which may be effective for fine-tuning water distribution under conditions of near normal flow can at best only spread the impact of shortages or export them further downstream. Under present conditions there are few (if any) consequences for upstream communities failing to honour water allocation agreements.

In the past community peer pressure may have been sufficient to stop upstream communities from over-using water resources, but in the current politically fragmented rural landscape, and with the emergence of new power brokers, this is no longer the case. There is now a clear need for an overarching authority within river basins to help restore balance to upstream/downstream relations. Some of the biggest and most intractable problems occur at the river basin scale. Unlike at canal level, collective decision-making at the river basin level has no clear precedent in customary water management and so the organisation of proposed River Basin Councils (RBCs) and sub-councils will constitute a special challenge.

The major problem weakening customary water management has not been the operational structure of institutions or the equity of entitlements

52 Srinivas Chokkakula, "Interrogating Irrigation Inequities: Canal Irrigation Systems in Injil District," (Kabul: Afghanistan Research and Evaluation Unit, 2009).

and responsibilities (which seem to be major foci of WUA planning), but has instead been the issue of enforcement of these entitlements and responsibilities. Unless WUAs and RBCs incorporate effective mechanisms for achieving universal compliance, new institutions will fare little better than traditional ones.

Communities visited by research teams involved in the WOL study indicated that the government needed to prioritise and provide greater support to solving water allocation conflicts. RBCs could potentially be effective forums for restoring balance to relationships of asymmetric power, but only if they are seen as legitimate in the eyes of the water using community. It will be some time before RBCs are established. It is unclear what interim measures could or should be pursued. This appears to warrant further attention.

A case study on the history of the *mirab* system for the Jangarok canal in Baghlan province found that key aspects of water management at canal level—such as the remuneration of the *mirab*, the organisation of collective labour and the regulation of water demand—have undergone important changes over the course of the canal system's history. These changes have typically been enforced by local government and commanders (not *mirabs*), though *mirabs* have led successful initiatives such as restoring the canal after the war. These findings question the notions that *mirabs* adhere to "traditional and long-accepted norms based on customary law" and that canals are largely managed by communities and their elected *mirabs*.

Findings on water policy and proposed legal framework

Integrated Water Resources Management is aimed at increasing both the overall amount of water available for irrigators (through infrastructural works) and the equity of its distribution (through institutional reform). All large-scale water sector programs are now working within this framework.⁵³ Improved equity in water management has the

53 A summary of ongoing and planned irrigation programs is given in B. Rout, *How the Water Flows: A Typology of Irrigation Systems in Afghanistan* (Kabul: Afghanistan Research and Evaluation Unit, 2008).

potential to widen entry to markets for high-value horticultural crops that are now dominated by upstream farms. Even the most water deficit tail-end irrigators would be able to increase cereal yields, an important goal of agricultural policy following the 2006 wheat price rises.

The ANDS/WRM and draft Water Law seek to promote community-based management of water resources and irrigation infrastructure. Recognising that the capacities and performance of traditional water masters (*mirabs*) vary significantly across rural communities, they envisage that many will be supplanted by new WUAs. The “either/or” language regarding traditional systems or new WUAs may be misleading. It seems likely that communities along a canal will continue to elect *mirabs*, but that they will be encouraged to form associations that can hold *mirabs* accountable, facilitate collective problem solving to reach consensus on priority issues, provide a point of contact for development assistance, obtain legal recognition and establish formal ties with relevant government agencies.

At least two projects have drafted WUA charters for Afghanistan.⁵⁴ This raised concerns that a “blueprint” approach to establishing WUAs that overly prescribes WUA structures and functions would diminish the potential to adapt WUAs to local conditions.⁵⁵ Many policymakers are looking to the EU-funded Participatory Management of Irrigation Systems (PMIS) pilot project for evidence from the field. PMIS is a strong advocate of a flexible, community driven approach. The project began with a research phase to develop an understanding of existing practices and concerns and obtain data on water distribution and the hydraulic properties of canal systems. The project approach explicitly avoided pursuing a blueprint for creating new institutional structures, and instead focused on issues that were identified as important by the communities along each canal. Consequently, water management arrangements differed between canals. Agreed solutions were not always optimal

54 The USAID-funded Rebuilding Agriculture Markets Program (February 2006) and the Asian Development Bank-funded Balkh River Integrated Water Resources Management Project (May 2006).

55 Kai Wegerich, *Water Strategy Meets Local Reality*.

with respect to irrigation efficiency, but they were generally considered appropriate. The research phase, stakeholder consultation process, and focus on collective problem solving promoted a learning-by-doing approach to capacity building and favoured incremental, steady progress over quick results.

Although a blueprint approach to establishing WUAs is not proposed in the final ANDS/WR, the draft Water Law indicates that WUA roles, responsibilities, and authority will be regulated by a WUA charter (Article 18). It is not clear if this entails a single charter for all WUAs, or if WUAs will have some flexibility in crafting their own charter.

Ground water from wells and traditional *karez* (underground irrigation infrastructure) is commonly managed as private property by owners and is outside the authority of community-based management systems. Unregulated extraction has reduced the amount of water available to other water users and raises concerns about the long-term sustainability of the ground water supply. The draft Water Law requires a permit to drill a new borehole or construct a deep or shallow well for commercial, industrial, agricultural and urban water supply purposes (Article 21); however, it makes no reference to permit requirements for existing infrastructure. Similarly, while existing rights of “traditional systems” will eventually be regulated by a permit (Article 20), this appears to apply only to community managed systems. No reference is made to individual or private owners of existing wells and *karez*. This appears to be a significant gap.

Increase in the number of wheat and rice mills and microhydropower (MHP) plants poses a threat to tail-end water users. Mills and MHP plants are considered non-consumptive uses of water, however, they divert significant amounts of water from the main canal into secondary canals. From there, water may be diverted back to the river or into other canals, thereby reducing the amount of water available to downstream users in the original canal. Communities interviewed for a WOL case study stated that resolving this conflict is a high

priority.⁵⁶ The draft Water Law notes that water used for generating electricity (including MHP plants) should be managed in a manner that does not affect drinking and domestic water, river banks, or other infrastructure (Article 25). No reference is made to the possible impact on irrigation water supply. In addition, it states that installation of MHP plants in irrigation systems will be subject to approval by MAIL, MRRD, and local WUAs (Article 25). This suggests that MHP plants will not be regulated by MEW, the agency responsible for licenses and permits (Article 21). No reference is made in the draft Water Law to mills or “non-consumptive” uses of water. It is possible that new mills could be required to obtain a permit under the clause that governs water withdrawal in new development projects (Article 21), but this requirement is not explicit. These gaps need to be addressed.

The draft Water Law seeks to clarify water rights through the use of permits and licences. The technology for measuring the amount of water diverted into canals or delivered to individual plots is not currently in place. It will therefore be necessary to install this technology before this component of the law can be implemented.

3.3 Key findings on livestock

WOL thematic studies on livestock addressed a range of inter-connected issues. Early studies described the major features of rural livestock production while later ones investigated how farmers access and utilise feed resources for livestock production, what is produced,⁵⁷ how effectively livestock are marketed,⁵⁸ and how to improve livestock productivity. The studies sought to identify how interventions to support market-orientated livestock

56 Kai Wegerich, *Water Strategy Meets Local Reality*.

57 For a full description and discussion of livestock feed and production regimes, see A. Fitzherbert, “Water Management, Livestock and the Opium Economy: Livestock Feeds and Products,” (Kabul: Afghanistan Research and Evaluation Unit, 2007). See also Alan Roe, *Findings from the First Year of Farm and Household Monitoring*.

58 For wider study of livestock marketing see E. Thomson, “Water Management, Livestock and the Opium Economy: Livestock marketing,” (Kabul: Afghanistan Research and Evaluation Unit, 2007). See also Roe, *Findings from the First Year of Farm and Household Monitoring*.

production can be most effectively targeted.

Findings on livestock production systems

Livestock can enhance livelihoods by helping farmers diversify production, reduce risk and add value. Depending on available resources and production conditions, livestock can be incorporated into a range of farming systems. For example, small numbers of animals can be effectively integrated into irrigated cropping systems, while sheep and goat herding at a larger scale is suitable for high-risk rainfed conditions. In Afghanistan, commercial production of sheep and goats requires access to natural pastures and rangelands; however, all livestock production systems ultimately require cultivated or purchased fodder during the winter months, when rangelands cannot support grazing. Research findings confirm that access to feed is a key constraint on a farmer’s ability to sustain livestock through the winter months.

Cattle ownership was found to primarily serve subsistence functions (dairy production for domestic consumption and farm traction in the case of bullocks). This form of management is usually farm-based and heavily reliant on cultivated feeds. By contrast, sheep and goat herding combines production for domestic supply with supply to markets and makes greater use of pastures and extensive grazing off-farm. However, production from most livestock at research sites appears to be below breed potential, with access to winter fodder the primary constraint across all production systems.

The NADF notes that scarcity of winter forage and feed for livestock is a major constraint to livestock production in Afghanistan. It recommends development of a winter feeding program, possibly linked to a rural credit program that offers specialised loan products that reflect the seasonal nature of agriculture. It also proposes establishing storage facilities in rural communities for feed, cashmere and wool to take advantage of seasonal changes in market prices or to serve as collateral for loans.

The management of flocks at rainfed sites was identified to be more orientated to market supply than at irrigated or semi-irrigated sites. Farmers at rainfed sites manage considerably larger herds, run more high-value sheep than goats, and have a lower proportion of adult males than at irrigated sites. However, of all livestock management types it is the small ruminant flocks of nomadic pastoralists that appear to be best structured for market production, with large herd sizes and a high proportion of sheep and low proportion of males.

Given the greater market orientation and superior economic margins of sheep and goat management by nomadic pastoralists (*kuchis*), it should be a focus of greater subsector development. However, this economic advantage is threatened by land-use conflicts resulting in loss of access to traditional pastures, a consequence of illegal cultivation, construction and land grabs. Due to this, *kuchis* have become increasingly reliant on waged labour to sustain their livelihoods. In addition, livestock extension⁵⁹ and healthcare services appear under-represented in rangeland communities. They are instead concentrated in locations where animals are usually managed for subsistence purposes. The NADF seeks to address these issues through several measures, including establishing a Kuchi Support Program, expanding the network of veterinary field units into underserved areas and establishing mechanisms to resolve land-use disputes involving rangelands.

The 2009 NADF appears to increase the priority of the livestock subsector relative to the horticulture sector to achieve a more balanced approach that can support both economic growth and poverty alleviation outcomes. WOL research shows the comparative advantage of livestock production under rangeland conditions. Building livestock value chains in marginal, unirrigated areas where farmers and pastoralists have few other livelihood options and are highly vulnerable to risk offers a real opportunity for poverty alleviation.

59 Extension services are technical assistance provided to farmers, typically by government extension agents. "Livestock extension" focuses on livestock over other forms of agriculture.

Evidence from the field indicates that most farmers attempt to minimise production costs and therefore rarely achieve animals' full productive potential. Only wealthier farmers or specialised herders incur additional costs and risks to invest in livestock with the aim of generating income and building capital in the form of larger herd sizes. As a consequence of low-input management, lambs and kids are not fattened to optimal sale condition.

As noted above, cattle ownership is nearly always for production of milk and the supply of dairy products to the household. Field observations and data suggest that the majority of farms possess only a single cow and daily lactation only suffices for the household, without a marketable surplus. Any available milk surplus is often shared between households within informal networks of reciprocity. Milk is usually converted into a range of durable and non-durable milk products by women who hold responsibility for milking both cattle and small ruminants.⁶⁰ Farmers really only have the opportunity to supply milk to markets when they live in peri-urban areas and have the resources to integrate the management of two or more cows into their farming system.

On the evidence of WOL studies it seems likely that only a limited number of farmers (i.e. those already having preferential access to land and water resources and able to integrate fodder cultivation into other forms of cropping) are likely to be able to respond directly to increased urban demand for milk and other livestock products. Accordingly, the establishment of dairy and milk processing centres may not initially benefit the poorest.

Given cows' requirements for green fodder (especially to improve milk production), ownership of multiple dairy cattle is usually only possible where farmers are able to grow sufficient fodder, namely in irrigated river valleys. However, with the high opportunity cost of dedicating good irrigated land to fodder, the best examples of successful small-scale dairying have been observed where fodder can be intercropped with other high value

60 A fuller description of milk products and their preparation is given in A. Fitzherbert, "Livestock Feeds and Products," Appendix 2.

crops (such as stone fruit), or otherwise integrated into a cropping regime.

Both the ANDS/ARD and NADF highlight the importance of improving livestock breeds to enhance livestock productivity. There appears to be an opportunity for private sector establishment of cattle breeding farms that charge for artificial insemination services. This approach is consistent with the government's policy of promoting private sector service delivery models where feasible.

Current strategy documents are silent on the issue of whether exotic breeds should be imported to improve breeding stock. Proponents of exotics argue that this approach is the fastest way to upgrade breeds, because using local breeds requires a long-term research programme to conduct progeny tests on large enough numbers of livestock to identify enough breeders to have an impact. Opponents of exotics argue that the high cost and risk of importing and maintaining elite breed stock make this strategy ill-suited to Afghanistan. Exotic breeds are typically less suited to local climatic conditions, less resistant to local diseases and more sensitive to sub-optimal management practices. In addition, they require periodic imports of fresh stock to restore genetic merit in breeding stock.

Several projects plan to or already import dairy and dual-purpose cattle breeds. The Horticulture and Livestock Program imports cashmere goats from Mongolia and is establishing a breeding station on a government farm. And farmers in Nangarhar are already importing Pakistani goat breeds to improve milk yields. Evidence from these initiatives should be considered in designing future projects and programmes.

Findings on Livestock Markets

Collated data on livestock market transactions reveal very limited correlation between animal condition (e.g. size, age or weight) and price, and therefore few obvious incentives for producers to invest to improve animal condition. Nevertheless, anecdotal evidence suggests a growing practice in which farmers buy small numbers of weaned lambs from rangeland producers and fatten these

on cultivated fodder, crop byproducts and residues, before selling them at a higher price.⁶¹

As with all agricultural products, livestock prices fluctuate seasonally. These fluctuations are more evident in small ruminants. However, other factors such as drought and the behaviour of traders can have a greater influence on price levels and rates of change than seasonality. Further research is warranted to gain a better understanding of how market prices are derived and to identify strategies to help farmers manage risk associated with market prices.

Provided urban incomes in Afghanistan continue to grow as they have done over the past few years, a steady growth in the demand for fresh milk, dairy products and meat is expected. A large share of the domestic demand for milk, eggs, frozen chicken and live animals (mainly cattle and buffalo) is currently met by imports from Pakistan and other countries—suggesting that a ready domestic market exists for Afghan livestock products provided that producers can successfully compete against import prices.

The peri-urban owners of livestock appear well positioned to benefit from growing demand. Improved fattening through on-farm peri-urban finishing may be a feasible livestock value chain niche. There are clear opportunities to build value chains linking rangelands (as prime livestock production areas) with irrigated farms (for finishing stock) as small investment and diversification opportunities. Livestock owners in more remote areas may also be able to increase incomes through livestock fattening, provided that they are able to produce the feed needed on their own farms. This provides farmers owning appropriately situated irrigated lands the opportunity to participate in livestock value chains and allows rangeland producers to specialise in production of weaned juveniles. The primary challenge is to find ways to produce feed on the limited area of cultivable land, most of which is used to grow food staples and cash crops. The NADF mentions lamb fattening

61 Roe, *WOL: Challenges and Opportunities for Strengthening Licit Agricultural Livelihoods*, xv and 48. Based on Thomson, "WOL: Livestock Marketing."

and proposes developing additional options for integrating extensive sheep and goat production with semi-intensive winter management systems.

Since few farmers are self-sufficient in wheat, it is important to understand changes in the purchasing power of livestock relative to wheat. The exchange rate of sheep to wheat flour has fluctuated dramatically since 2000—from a low of two sacks of wheat flour per sheep in 2000 during the drought, to a peak of 7.5 in late 2003, gradually decreasing to six in mid-2007 as wheat flour prices increased, then falling quickly to two by mid-2008. These dramatic changes in the purchasing power of sheep are evidence of the vulnerability of livestock owners to shocks associated with drought and rapidly rising wheat prices.

3.4 Key findings on the opium economy

WOL thematic studies on the dynamics of opium poppy cultivation identify several drivers of poppy production in Afghanistan and highlight the impact of reductions in poppy cultivation on rural households. The evidence counters recent claims that poppy cultivation is no longer associated with poverty in Afghanistan. It also illustrates problems with counter-narcotic strategy, including the sequencing of interventions, which make current reductions in cultivation likely to be unsustainable. Inadequate measures of counter-narcotic success—which focus on reductions in the number of hectares cultivated with poppy over the previous year—diverts attention away from the broader range of interventions and outcomes required to achieve and sustain success.

Findings on farmer decisions in the cultivation of poppy

Levels of opium poppy cultivation rise and fall for a variety of complex, interrelated reasons that are often poorly understood. AREU field research on changes in opium poppy cultivation in the provinces of Nangarhar, Balkh, Ghor and Badakhshan from 2006 to 2008 illustrates how the underlying conditions that support or hinder poppy production vary by location, socioeconomic group

and time.⁶² Those with better access to resources, markets and off-farm incomes can reduce and ultimately abandon opium poppy more rapidly than those in more remote, resource-poor areas that are more exposed to risk and uncertainty. These differences in access and options play out within provinces, making outcomes of reductions and the sustainability of these shifts variable. This also means cultivation persists in some locations with few other livelihood options, such as in the remote areas of Ghor and Badakhshan. These variations require targeted policy interventions informed by in-depth knowledge at the provincial level.

WOL research identified top down persuasion and coercion, driven at times by promises of aid (Balkh, Nangarhar) and at others by desire for political respectability among provincial leaders (Balkh), as one reason for ending opium cultivation. Such bans may lead to dramatic reductions, but consequences can be such that farmers are soon ready to return to poppy cultivation, particularly if promised aid is not forthcoming. Nangarhar is a case in point here.

Economics were also found to have a role in declining opium cultivation. Reductions in poppy cultivation are often the result of a change in the comparative returns on agricultural crops and the poor environmental conditions for opium production. Due to an overall rise in global food prices, the more recent decline in opium price, the Government of Pakistan's ban on wheat exports and lower rainfall in Afghanistan, there has been a significant shift in favour of the terms of trade on wheat and away from opium poppy. In 2008, farmers in more marginal areas were able to obtain a greater quantity of wheat to meet their basic food needs by growing it on their own land than by growing opium to sell and using the proceeds to purchase wheat. Whether this is sustainable in the face of declining wheat prices is as yet unknown. High wage labour rates also affected decisions to

62 David Mansfield and Adam Pain, *Evidence from the Field, Understanding Changing Levels of Opium Cultivation in Afghanistan* (Kabul: Afghanistan Research and Evaluation Unit, 2007); David Mansfield and Adam Pain, *Counter-Narcotics in Afghanistan: The Failure of Success?* (Kabul: Afghanistan Research and Evaluation Unit, 2008).

plant opium poppy. Badakhshan illustrates this case, where high wages increased the opportunity cost of cultivating labour intensive poppy.

Quality of previous opium yields and agricultural prospects in the current year also influence farmer decisions. Bad past opium yields raise risks (Ghor, Badakhshan), while heavy snows or good rains may increase confidence in a good harvest of cereals or other crops, motivating a move out of opium (Ghor in 2006-07).

Patterns of cultivation are highly dynamic: not only may farmers shift in to and out of the crop on an almost annual basis, but when its cultivation is prevented in one area, it may spread to another, particularly when the institutional and security environments support cultivation, whether implicitly or explicitly. Poppy cultivation in the South is a case in point. It reached a record high in 2008 despite unfavourable prices and net returns. The increase of poppy cultivation in the South, where 98 percent of the production in Afghanistan is now concentrated, is the consequence of a systematic failure to deliver improved security, economic development and governance.

Physical insecurity in the southern provinces is at its worst for over a decade. In addition, the predatory behaviour of corrupt officials and the proliferation of checkpoints and “nuisance taxes” have returned, making transporting legal agricultural crops to market cost-prohibitive.⁶³ Those who travel on the roads risk violence, intimidation and extortion from officials and anti-government elements. Under these circumstances opium poppy is a low-risk crop in an exceptionally high-risk environment. It is high-value, low-weight and non-perishable. In addition, farmers can sell it at the farm without having to travel to district, provincial or regional markets.⁶⁴ There is a growing impression in the South that cultivation is tolerated—if not encouraged—by

63 David Mansfield, “Responding to Risk and Uncertainty: Understanding the Nature of Change in the Rural Livelihoods of Opium Poppy Growing Households in the 2007/08 Growing Season” (report for the Afghan Drugs Inter-Departmental Unit of the UK Government, July 2008).

64 Mansfield, “Responding to Risk and Uncertainty.”

corrupt government officials, and that government officials may be more actively involved in the trade in narcotics than the Taliban.⁶⁵

In conclusion, achieving a sustained decline in opium poppy area depends on many factors: most importantly improvements in security, economic growth and governance.

Findings on the links between poverty, insecurity and opium production

Poverty, poppy and insecurity are intrinsically linked in Afghanistan. While opium poppy has been cultivated in a wide range of areas and by varied socioeconomic groups in Afghanistan, it has tended to be most concentrated in areas with limited access to irrigated land, high population densities and limited off- and non-farm income opportunities—or where human insecurity is greatest. Rising physical insecurity in parts of the country also increases the attraction of opium cultivation, as noted previously.

These findings are challenged by the following statement and similar references in the ANDS/CN that suggest that poverty may not be an important factor in farmer’s decisions to grow poppy:

*Afghan farmers, indeed entire districts, are now growing poppy who did not do so only three years ago; and many have stopped growing poppy who were doing so earlier. Poverty was not the determining factor in these decisions... The poorest people in Afghanistan live in the north, which has either significantly reduced or ceased poppy production. On the other hand, the wealthier southern provinces have significantly increased poppy production.*⁶⁶

The statement that southern provinces are less poor is not supported by evidence from the Central Statistics Office (CSO). Data produced by the CSO in 2004 show similar distributions among both the southern and northern provinces in terms of social

65 Key informants in southern Afghanistan, personal communication, February and April 2008, cited in Mansfield and Pain, *Counter Narcotics: The Failure of Success*, 16.

66 MCN, “ANDS Counter Narcotics Strategy,” 1.

and economic well-being. Out of 34 provinces, the social and economic well-being of the southern provinces were ranked: Helmand 6th, Kandahar 15th, Uruzgan 32nd and Zabul 33rd. The seven northern provinces were ranked: Jawzjan 1st, Balkh 9th, Baghlan 11th, Samanghan 13th, Bamyān 18th, Faryab 25th, and Sar-i-pul 31st.

The UNODC statement appears to be based on data from a UNODC study on average household incomes for poppy-growing and non-poppy-growing households. This study found that both types of households in the southern provinces had higher incomes than their counterparts in central and northern provinces. Leaving aside the issues of income inequalities within provinces that may be hidden through aggregation and the methodological difficulties associated with measuring household income in developing countries, using household income in one year that is unadjusted for household size as a measure of poverty offers a limited understanding of the nature of poverty, particularly under conditions of chronic insecurity.⁶⁷

What the concentration of poppy production in Helmand and Kandahar demonstrate is not that poverty is irrelevant to decisions to cultivate poppy, but that relative wealth and favourable conditions for agriculture (larger-than-average size landholdings, plentiful irrigation, good soils, and proximity to provincial markets) are insufficient to motivate cultivation of other crops when physical insecurity predominates. Insecurity is more important in shaping farmers' decisions about poppy cultivation in that households are not inclined to cultivate other crops even where there is the potential to do so.

Stating that "poppy cultivation may not be directly related to poverty"⁶⁸ in Afghanistan is counterproductive, because it shifts focus away from understanding and addressing underlying factors that are critical to achieving sustained reductions in poppy production. To achieve sustained reductions,

67 Mansfield and Pain, *Understanding Changing Levels of Opium Poppy Cultivation in Afghanistan*.

68 MCN, "ANDS Counter Narcotics Strategy," 2.

greater understanding of the role that opium has played in rural livelihoods is needed. Some crops—particularly as part of mixed cropping systems combined with non-farm income opportunities—can compete with poppy in terms of financial returns when opium prices are lower. But no crop offers the same qualitative attributes: relatively drought resistant, non-perishable, an almost-guaranteed market, traders who offer advance payments against the future crop or agricultural inputs,⁶⁹ buyers who purchase at the farm-gate, and landowners who provide preferential access to land through sharecropping or lease arrangements.⁷⁰ These characteristics of poppy and the role that it has played in the rural economy with respect to enhanced food security (through advance payments and increased household income), economic opportunity (access to land, credit, markets, and other critical inputs), and reduced risk suggest the kind of interventions and development outcomes needed to both compete with poppy and to mitigate the negative impacts associated with reductions in poppy cultivation.

Findings on socioeconomic consequences of reductions in poppy cultivation

Opium production is deeply embedded in the rural economy and has a strong multiplier effect⁷¹ in terms of creating employment and off-farm opportunities. Evidence suggests that the problems associated with rapid, large-scale decreases in poppy cultivation can undermine counter-narcotics efforts, whether achieved by eradication or by

69 Although advance payments on future crops can be obtained on other agricultural products (such as wheat and black cumin), opium is the crop favoured by lenders.

70 As a labour-intensive crop, opium poppy provides access to land for those who do not own enough land to meet their basic needs. If the land-wealthy cultivated less labour-intensive crops, their land may no longer be available to sharecroppers, or for lease, but would instead be farmed using labour from the landowner's family or relatively little wage labour. In addition, an agreement to plant poppy may be a condition of getting access to land. Landowners often give preference to farmers who are willing to cultivate opium poppy because it enables the landowner to earn more income, through higher rent or a share of the crop (half to two-thirds).

71 A multiplier effect occurs when an economic activity stimulates growth in other parts of the economy, thereby creating greater impact.

pressure on farmers to not plant. Examples of negative impacts are summarised below:

Higher opium prices: Reductions in supply can lead to sharp increases in prices, as happened after the 2001 Taliban ban. This can motivate a return to cultivation if other options are not available.

Increased debt: Sharp increases in opium prices can lead to higher debt burdens as happened after the Taliban ban when traders converted opium-denominated debts to cash at the new prevailing market rate. Many farmers saddled with high levels of debt responded by maximising the amount of land they allocated to opium poppy in the next planting season, mortgaging their land, or exchanging daughters as payment for loans.⁷²

Loss of on-farm income, reduced wage rates, and increased rural unemployment and migration: The loss of on-farm income and labour opportunities from not planting opium poppies resulted in a surplus supply of labour, which in turn reduced the wage rate (both cash and in-kind).⁷³ In other words, there were fewer jobs and what jobs remained paid lower wages. Many young men who lost work migrated to Pakistan or Iran.

Broader economic downturn: Linked to opium's multiplier role, decreases in cultivation reduce incomes in households that previously cultivated opium and in those securing wage labour in poppy fields, as well as reducing revenues and profits of a range of businesses with no direct links to the drug trade, including hotels and general stores.

Increased vulnerability to shocks: The 2008 ban in Nangarhar was implemented at a time of soaring wheat prices. The consequence was increased food insecurity for many farmers, even those who

72 United Nations Office on Drugs and Crime, "Opium poppy cultivation in a changing environment: Farmers' Intentions for the 2002/03 Growing Season" (Kabul: United Nations Office on Drugs and Crime, 2004).

73 David Mansfield, "Pariah or Poverty? The Opium Ban in the Province of Nangarhar in the 2004-05 Growing Season and Its Impact on Rural Livelihood Strategies" (International Document No. 11, German Agency for Technical Cooperation (GTZ) Project for Alternative Livelihoods in Eastern Afghanistan, 2005).

allocated as much as 95 percent of their land to wheat, because few households own enough land to be self-sufficient in wheat. Wheat farmers with household wheat deficits were in no position to sell their crop to take advantage of the higher price, and households that lost income from not growing poppy were less able to purchase enough food to meet basic requirements.⁷⁴

Growing discontent and reduced security: The top-down, coercive means by which bans are implemented and the subsequent impacts on rural households and the wider economy have contributed to growing discontent among the rural population. This has had a destabilising effect in some areas, including Nangarhar.⁷⁵

The promise of development assistance has been used to negotiate reductions in poppy cultivation with local powerbrokers and to partially offset opium income losses. However, development assistance has generally not created sufficient economic opportunities to support the transition out of poppy production. This sequencing is also short sighted. Reductions in cultivation are expected before investments to create viable livelihood options are made, leaving many households struggling to cope. When cultivation rebounded in Nangarhar in 2007, it did so in an atmosphere of mistrust, broken promises, economic stagnation and higher opium prices. Addressing the underlying causes of opium poppy cultivation becomes much more difficult in such an environment.

Disproportionate impacts: Enforced reductions in opium cultivation tend to have a disproportionately severe impact upon the poorest and most vulnerable. As repeated throughout this paper, although opium represents a profitable high-value crop for a small number of wealthy landowners, for many households afflicted by severe resource scarcity, it constitutes the only

74 Mansfield, "Responding to Risk and Uncertainty," 37-38, and Mansfield and Pain, "The Failure of Success."

75 David Mansfield, "Resurgence and Reductions: Explanations for Changing Levels of Opium Poppy Cultivation in Nangarhar and Ghor" (Kabul: Afghanistan Research and Evaluation Unit, 2008); David Mansfield and Adam Pain, *The Failure of Success*.

crop that can sustain a farm-based livelihood given the available resources.

Alternative livelihood programmes (also known as “alternative development”) typically entail short-term, cash-for-work projects and investments that support the growth of high-value horticulture crops and livestock. This approach favours wealthier farmers in areas well-linked to markets, where the exit options out of the opium economy are greatest, as has been seen in Nangarhar. It fails to address the broader issues of risk, vulnerability, and access intrinsically linked with opium poppy cultivation.

The political pressure on donors and implementing partners to demonstrate quick results and meet ambitious performance targets does not favour pro-poor approaches nor long-term interventions to sustainably reduce poppy cultivation. Rather, performance indicators and targets often institutionalise disincentives for working in more challenging areas with disadvantaged groups. The pervasive lack of security in poppy production areas further concentrates development assistance around regional centres.

Current counter-narcotics success indicators, especially a reliance on the amount of land cultivated with opium poppy, also tend to create confusion regarding what success might look like and what is required to achieve it. As noted in the NDCS, area-based indicators provide little information about the sustainability of declines and their underlying causes or consequences. Although the NDCS and ANDS/CN recognise the limitations of this indicator and include several additional indicators, these do not capture whether reductions reflect a long-term trend of movement out of opium poppy, or simply a short-term reaction to political pressures or military intervention. They do not assess whether an enabling environment exists to support a sustained shift away from opium poppy cultivation. Indicators representing the presence of such an environment, along with measures of amount of land cultivated, would provide better information with which to evaluate counter-narcotics and more general rural livelihoods interventions.

Findings on public opinion on chemical spraying

NATO polls have shown consistently that Afghanistan’s rural population opposes spraying poppies with herbicides.⁷⁶ Field evidence collected by AREU in November and December 2006, at a time when the media and officials in the provinces were discussing chemical eradication supports this finding.⁷⁷ Many rural Afghans believe that spraying would result in crop failures, sickness and perhaps the death of livestock and people. In an environment where infant and child mortality and morbidity rates are high, where crop failure is common, and where livestock are vulnerable to a variety of diseases, there is considerable potential for the rural population to link such occurrences to spraying, should it be implemented. An eradication campaign that involves spraying could undermine any trust that rural communities might have in the government. To date, the Government of Afghanistan has resisted efforts by others to advocate aerial spraying. The NDCS says that only ground-based methods of eradication will be used, which precludes aerial spraying, while the ANDS/CN omits any reference to ground-based methods or spraying.

3.6 Conclusion

This section reviewed the key findings from the WOL study in relation to rural livelihood security, land tenure, water management systems, livestock production and the opium poppy economy. It placed the findings in the context of the existing policy environment when relevant as well as identified gaps in policy. The next section describes the recommendations drawn from the study’s findings. The aim of the recommendations is to inform natural resource management policy so as to improve its pro-poor orientation and outcomes.

76 David Mansfield, “Governance, Security and Economic Growth: The Determinants of Opium Poppy Cultivation in the Districts of Jurm and Baharak in Badakhshan,” (Kabul: Aga Khan Development Network, February 2007) 44-45.

77 David Mansfield, “Governance, Security and Economic Growth,” 44-45.

4. Recommendations

The major objective of the WOL research is to enhance the sustainability of Afghan rural livelihoods and reduce dependency on illicit crops by providing policymakers with clear and accurate information on the use, management and role of natural resources in farming systems, and how these influence opportunities for agricultural development. The findings described in the previous section illustrate the complex relationship between agricultural production and the construction of rural livelihoods. The evidence shows the deep integration between farm production to supply markets, farm production to supply the household, and off-farm economic activities. Policy and programmes must reflect this complexity through supporting subsistence as well as market production, and focusing on facilitating rural livelihood diversification to reduce risks and provide greater resilience in the face of reductions in illicit livelihood options.

4.1 General recommendations

Promote equity of access to natural resources

There exist direct links between access to common property resources (such as water and pasture) and opportunities to increase agricultural production. Access to these resources is heavily mediated by informal institutions and evidence shows that these may serve to reinforce the existing distribution of power and wealth. There is need for unambiguous legislation codifying user rights to natural resources. Furthermore, relevant state and community institutions must be empowered and encouraged to promote greater equity in how resources are allocated.

Recognise the value of non-market agricultural production

The heavy emphasis of policy on agricultural production for market supply risks overlooking the important functions of non-monetarised production. Particularly in remote locations with poor access to markets and services, farm products can make

important contributions to household well-being, including through ensuring food self-sufficiency and market independence, both in the long term and during specific periods of crisis or special need. These functions include bridging periods of cash scarcity, non-monetary transfers to service social networks, and livestock being maintained as stores of value. Policy should recognise the contribution of production outside of the monetary economy and take a more holistic view of agriculture as both a form of livelihood and a means of production.

Support the resource-poor to enter markets

Many rural Afghan households face very severe resource scarcity; indeed, very few have access to sufficient land to effectively participate in markets, even assuming they first ceased cultivating food crops. Furthermore, WOL research indicates that farmers associate participation in agricultural production for market supply with high risk, which discourages their participation. Programmes aiming to stimulate agricultural markets should offer the resource-poor preferential access to credit and other agricultural inputs and seek other means to decrease the risks associated with production for market.

Expand opportunities for on-farm, off-farm, and non-farm labour

Functioning labour markets and sufficient employment opportunities at adequate wage rates are central to achieving improvements in rural livelihood security. Current strategies could perhaps benefit from greater distinction between on-farm, off-farm, and non-farm jobs. All play an important role in diversification and income generation.

In addition, it is important to systematically consider how proposed interventions directly or indirectly affect employment opportunities. For example, the NADF proposes improving access to farm equipment such as tractors, seed drills, harvesters, threshers, and seed cleaners. Promotion of labour-saving technologies eliminates jobs. When labour rates

are low, they may also be economically inefficient. This raises the point that there can be trade-offs between job creation and other stated objectives, such as raising agricultural productivity. These trade-offs need to be more explicitly debated in selecting policy options.

4.2 Key recommendations on land tenure

Land registration through a deeds registry

Afghanistan needs to move toward an effective system of private land registration and administration. Given the wide acceptance and convenience of customary systems, locally situated and managed deeds registries should be established in rural areas. This will avoid the complexity and expense of a cadastral survey, and destabilising disputes in resolving final title, yet achieve many of the benefits of registering land titles. A deeds registry can indeed constitute a useful step toward establishing final title.

Promotion of land transfer documentation

Public awareness among rural Afghans should be raised to encourage recording and documenting transfers of land by whatever means are available. At present transfers of land by inheritance are almost never recorded and notarised. Even informal documentation will be of assistance to land administrators and local officials (and the land managers themselves) when a system of land registration is introduced.

Resolution of disputes over common property

There is a need for an effective mechanism for arbitration and resolution of disputes over common property; at present customary-based informal systems of adjudication are least effective in resolving these as they often involve actors from outside the community or power asymmetries. There is clearly a need for outside agencies to sanction the outcome of negotiated settlements between disputants or to lead dispute resolution themselves.

Improved understanding of subordinate land rights

Temporary rights of land use, through lease, mortgage and sharecropping should be left as they are. They play complex and specific roles in the rural economy and should not be altered or removed from the legislation without further review and consideration. Nevertheless, there is need for a more comprehensive analysis of the terms and conditions associated with temporary use agreements and the impact of these on rural livelihoods.

In planning for equitable development, policymakers and practitioners must take account of the extent to which crop incomes are redistributed through the rural economy from landless labourers and sharecroppers to landowners. This has important implications for the achievement of pro-poor development objectives, particularly in areas where sharecropping is widespread. Income generation initiatives not subject to sharecropping terms (such as livestock production or waged labour) may hold greater potential to benefit the landless.

4.3 Key recommendations on water management

Promote accountability through greater community participation in water management

Conflicts of interest and power asymmetries undermine local governance of water. There is a clear need to build local communities' capacities to manage water resources and to promote greater accountability. Mechanisms for stakeholder representation should be identified in consultation with local communities. One approach adopted by communities under the PMIS project is to establish a committee comprised of representatives of communities along the length of the canal to oversee and support the *mirab*. Efforts to enhance representation at the canal level need to be augmented by efforts to enhance representation at the community level, by identifying and encouraging the participation of stakeholders who might otherwise be excluded, such as women and small farmers.

Promote a flexible approach to establishing WUAs

The reference in the draft Water Law to a WUA charter (Article 18) should be clarified to ensure that WUAs will have a reasonable degree of flexibility in crafting their own bylaws. The use of a detailed charter that applies to all WUAs precludes meaningful stakeholder participation in adapting WUAs to local conditions. It also suggests that organisations can be created instantaneously, before there is community interest or trust.

Start with research and build incrementally

A collective diagnosis of current and historical water management practices and issues should be the starting point of any attempt to form a WUA or strengthen existing management practices. This should be combined with data collection on water distribution and the hydraulic properties of canal systems to provide evidence for decision-making. Blueprints for creating new institutional structures should be avoided in favour of a learning-by-doing approach to capacity building and incremental, steady progress. Engaging communities in collective problem solving allows them to build trust and achieve a tangible success. As needs for new institutional arrangements are identified, communities can propose new rules and regulations and define roles and responsibilities. The goal should be “just enough organisation” to address practical problems. The creation of WUAs should follow a process of diagnosis, rule-making, implementation, feedback and adaptation.

Sequencing

Efforts to increase the equity of water allocations along primary canals may initially have a detrimental impact on the cultivation of high-value cropping in upstream areas. This highlights the need for careful consideration of sequencing in infrastructure interventions (increasing water flows), institutional interventions (increasing equity in water management) and programmes to stimulate agricultural growth (establishing value chains for high value crops).

Improve on-farm water management

Efforts to improve on-farm water management practices can help reduce the gap between water supply and demand at river basin, canal and farm levels. For example, in the Kunduz River Basin improved rice cultivation methods (e.g. System of Rice Intensification) that conserve water could reduce upstream water consumption, increase yields and increase the volume of water available for downstream users.

Explore options to establish interim measures for conflict resolution

There is an urgent need to build capacities in dispute resolution and identify interim mechanisms while waiting for the establishment of WUAs and river basin councils. A potential for collaboration exists with similar efforts to develop mechanisms for resolving conflicts over use of pasture lands, currently being developed under the Pastoral Engagement, Adaptation and Capacity Enhancement, or PEACE, project.

Exercise caution in rehabilitating intakes

Improving diversion structures and intakes from sources with fixed structures (a common strategy in irrigation rehabilitation) may increase extraction efficiency in the short term, but for communities in river valleys the most effective strategy may be moving the point of extraction to follow the changing level and alignment of the river. Furthermore, building permanent off-takes at the heads of canals may disproportionately benefit upstream communities and reduce their incentive to contribute labour to canal maintenance elsewhere.

Promote more equitable distribution of the costs and benefits of irrigation rehabilitation

Conveyance losses at the lower end of long canals have a direct impact on the most vulnerable and water-scarce farmers. Tail-end farmers are generally least able to pay for infrastructure rehabilitation and improvements. Programme interventions should try to ensure equitable benefits and responsibilities throughout the system, in consultation with communities.

Rehabilitate upper catchment irrigation

Efforts to increase agricultural productivity through improved irrigation have focused on lower catchment systems. However, WOL research findings highlight the opportunity for better managing variability of water supply in upper catchment systems. Data suggests that during the months of peak flow, mean on-farm flows in upper catchments actually exceed those received in lower catchments (and for smaller cultivated areas). WOL studies have suggested that relatively minor interventions to improve storage and conveyance of water at some sites might be sufficient to allow a second (high value) crop. This would be consistent with a pro-poor agricultural policy and strengthen licit agricultural livelihoods in otherwise resource-scarce areas.

Clarify draft Water Law clauses related to groundwater extraction and urgently enforce measures to control groundwater extraction

At present there appears to be little or no control over installation of new wells and groundwater extraction. The beneficiaries of this are usually wealthy farmers, often to the detriment of other water users. Unlike surface water, ground water use is not subject to community oversight. Significant gaps in the draft Water Law need to be addressed to ensure that the regulations governing groundwater extraction licences and permits apply to pre-existing wells and *karez* (not only new infrastructure) and private owners of wells and *karez* (not only community organisations).

Address gaps in the draft Water Law related to microhydropower plants and mills

Lawmakers need to address apparent gaps in the draft Water Law related to negative impacts on irrigation water supply from MHP plants and mills, particularly in light of plans to expand the number of MHP plants and feed mills. In addition, in accordance with the Environment Law, development projects that support the construction of MHPs and mills should develop and implement appropriate environmental due diligence procedures to mitigate negative impacts on downstream water users. A standard environmental due diligence checklist and stakeholder consultation procedure could

be used to guide due diligence activities, on the condition that they be adapted to local conditions as needed. The National Solidarity Programme has likely already developed checklists and procedures for MHP plants; however, feedback from local communities should be solicited to determine if procedures are effective in mitigating impacts to acceptable levels.

4.4 Key recommendations on livestock

Inclusion of rangeland communities in developing value chains

Efforts to build livestock value chains should target communities that traditionally produce to supply the market. The greatest focus of development interventions has been on more accessible river valley sites where animals are not so regularly managed for monetary values.

Increased focus on livestock husbandry

Historically, there has been a strong veterinary focus to livestock development initiatives in Afghanistan. WOL research draws attention to important weaknesses in the management, nutrition and marketing of animals that constrain productivity, and recommends that greater efforts be directed to improve livestock husbandry practices.

Improved security of access to pastures and rangelands

Securing access to seasonal pastures and rangelands is vital for the growth and long-term viability of commercial herds, but access to these resources is threatened by illegal cultivation, construction and land grabs. Rangeland communities are often particularly vulnerable against powerful or influential actors. There is a need to strengthen the legal framework for community-based, land use agreements and develop capacities in enforcement and conflict resolution. One important aspect of capacity is motivation. There is a need for advocacy and incentives within responsible organisations to adopt values and attitudes that discourage corruption and encourage transparency and equal application of the “rule of law”.

Credit services for commercial livestock producers

Access to agricultural credit would enable nomadic pastoralists and other sheep and goat producers to retain animals until more profitable weights are reached. This would increase farm revenues and opportunities for re-investment in livestock. At present, nomadic pastoralists, who have the largest livestock herds and a highly market-oriented production system, are not normally eligible for credit.

Foster linkages between producer and finishing areas

While rangelands offer comparative advantages for livestock production, irrigated farms are better suited to provide supplemental feeds to finish animals for supply to market. Building market chains based on these comparative advantages will add value to production, diversify livelihoods and spread incomes.

Improve feed production

The full benefits of animal health interventions and genetic improvement are only realised in well-nourished animals. Better nutrition of healthy indigenous breeds fed with balanced diets based on locally available ingredients is often the most suitable approach. Many development projects include health and genetic improvement activities but give too little attention to nutrition. Potential options include promoting cultivation of forage crops on rainfed land; increasing rangeland productivity through better natural resource management coupled with mechanisms to resolve disputes over the use of pasture lands; increased use of crop residues (such as wheat straw treated with urea) for ruminant feed; and establishing feed mills in areas with semi-intensive, market-oriented production schemes. These approaches warrant further research to better understand farmers' choices and risk, in view of the global increase in cereal prices and the high opportunity cost of using scarce land, labour and water resources to grow livestock feed crops instead of food staples or cash crops.

Conduct applied and participatory research at the farm and herd level

More livestock research should be conducted on farms and among *kuchi* households, rather than on government or university research farms. Involving farmers and herders in identifying problems, implementing solutions and evaluating results increases the likelihood that research efforts focus on the priorities of livestock owners and that recommendations are adopted. Existing data gaps related to livestock productivity include: breed characterisation of cows (milk off-take and fertility of local and crossbred cows under local and improved production conditions); breed characterisation of sheep (fertility, growth rate and wool quality of major sheep breeds under local and improved management before considering the need to import exotic breeds); importation of dairy goats (on-farm performance of adapted Pakistani dairy-type goats to replace small low-producing *watani* cows); and efficacy of anthelmintics (internal parasite load in livestock in different regions during different seasons).

4.5 Key recommendations on counter-narcotics

Measure success against a broader set of indicators

In general, a wider set of indicators is needed than those listed in the ANDS/CN to detect changes in the underlying drivers of poppy cultivation and alternative livelihood opportunities. These indicators should reflect improvements in governance, social protection and economic opportunity. Indicators should differentiate by location to capture different geographical and economic constraints and differentiate between households that are land and water rich (primarily located in areas of high and medium potential) and those that are land and water poor (to be found in areas of high, medium and low potential).

Social protection outcomes: Food security requires that households are able to meet minimal acceptable consumption levels. This can be achieved through a variety of means, such as food

provision, cash transfers and employment schemes. Support must be carefully targeted at vulnerable households and be of sufficient scale, duration and reliability to assure food security. Food security assessments undertaken through the National Risk and Vulnerability Assessment are one means of evaluation.

Governance outcomes: Provision of basic security, including assurance of personal safety and functioning conflict resolution systems, is needed. There is a clear need to develop participatory security and conflict assessments as part of efforts to systematically evaluate household experiences of basic security.

Economic development outcomes: For high and medium potential areas, evidence of viable and inclusive commodity markets would indicate opportunities for resource-rich farmers to exit opium poppy cultivation. Analysis of commodity markets and farm household income surveys that measure market participation, returns to producers and terms-of-trade are needed. For all other areas and households, the key livelihood issues are functioning labour markets, wage rate levels and sufficient employment to provide household security.

The use of opium area as a counter-narcotics indicator should only be used in conjunction with the above indicators. Evidence for counter-narcotics success entails a year-by-year decline in opium area combined with progress in households gaining social protection, basic security, incomes and employment. This is consistent with the government's counter-narcotics mainstreaming policy, whereby counter-narcotics is integrated with rural development policy and programming.

All of the above argue for a more systematic and routine survey and analysis of the rural economy than is currently undertaken. Although the NRVA and UNODC surveys track several important indicators, data gaps remain and better analysis of existing data is needed to understand the implications for counter-narcotics initiatives. This issue should be addressed in the forthcoming revision of the NDCS.

Mitigate potential negative impacts of poppy reduction

The existence of both the government's annual eradication target and the Good Performers Initiative indicates that a dramatic reduction in cultivation is something to be desired and replicated. This contradicts interests in mainstreaming counter-narcotics and in increasing stability and state legitimacy because eradication can undermine counter-narcotics and counter-insurgency aims if pursued in a manner that exacerbates livelihood insecurity. Targeting both eradication activities and the imposition of bans on poppy cultivation in areas where opportunities for licit livelihoods exist and on large rather than small farmers is one way to minimise the negative impacts of both actions. However, this approach requires means of assessing where sufficient opportunities exist for licit livelihoods, based on the indicators described previously, as well as criteria to define what constitutes "small" versus "large" farmers. The latter criteria are required to improve transparency, particularly in view of allegations that corrupt officials involved in eradication efforts often target small poppy farms because small farmers are less able to pay bribes to avoid eradication.

One important challenge to implementing a targeting policy is that provincial and even district-level statistics on rural livelihoods will not adequately capture the distribution of "high-potential" and "low-potential" areas within provinces and districts. This requires mapping access to market roads, irrigation infrastructure and services; landscape features, natural resource characteristics and climate data; wage rates; household incomes and other socioeconomic data; security indicators; market prices; incidence of crop and livestock disease; and other important factors. The National Agriculture Information System or other existing databases and Geographic Information Systems could be used for this purpose. The information needed to effectively implement MCN's targeting policy would benefit a wide range of rural development projects and programmes and support ongoing efforts to identify evidence-based, pro-poor interventions.

Another means of mitigating negative impacts is by avoiding both eradication and bans and instead making different choices on the type and sequence of interventions, and the desired pace of change. Eradication and cultivation bans seek quick fixes to a problem ingrained in rural livelihood strategies, and risk producing unsustainable results that reduce rural welfare and stability. WOL research findings support taking a longer term view and sequencing interventions so that farmers are motivated to move out of opium cultivation due to the presence of an enabling environment that supports this transition, characterised by sufficient achievement of social protection, economic growth and governance. This approach is more likely to produce sustained declines in opium poppy production. It is also in line with the government's counter-narcotics mainstreaming policy.

Claims that opium production is no longer linked with poverty are based on faulty analysis. They have serious implications for rural development and counter-narcotics strategy and undermine support for a carefully designed and implemented targeting policy. Such claims and suggestions should be removed from the ANDS/CN and other official policy documents and replaced with a more accurate interpretation of the evidence and a transparent statement of the implications for strategy.

Target agents, dealers and patron networks

Networks of agents, dealers and patrons (including both Taliban and corrupt government officials) drive the expansion of the opium economy at the provincial level. Pressuring influential elites to move out of opium cultivation and trade will have a direct impact on the function of the broader opium economy. The credibility of the government's commitment to disrupting the trade and countering corruption would be greatly enhanced by removing senior officials in the South with ties to the drug trade. This approach is consistent with the NDCS and ANDS/CN.

Address the underlying drivers of risk and insecurity

Addressing the underlying reasons that drive farmers to grow opium requires addressing the issues of chronic risk and insecurity caused by the actions of unaccountable formal and informal power holders. Opium poppy continues to be perceived as a low-risk crop in a high-risk environment. Changing this perception requires more than increasing the risks associated with opium poppy cultivation, through the threat of eradication and imposition of bans, or the incentive of short-term development assistance. More fundamental changes are required to reduce rural livelihood risk and insecurity, focused on reducing corruption, improving infrastructure and other critical public goods, and promoting pro-poor growth in agriculture and the rural non-farm sector. Recent changes in agriculture and rural development strategy that demonstrate a stronger emphasis on promoting pro-poor growth are a move in the right direction toward reducing opium poppy cultivation as well as supporting equitable, integrated rural development outcomes.

5. Conclusion

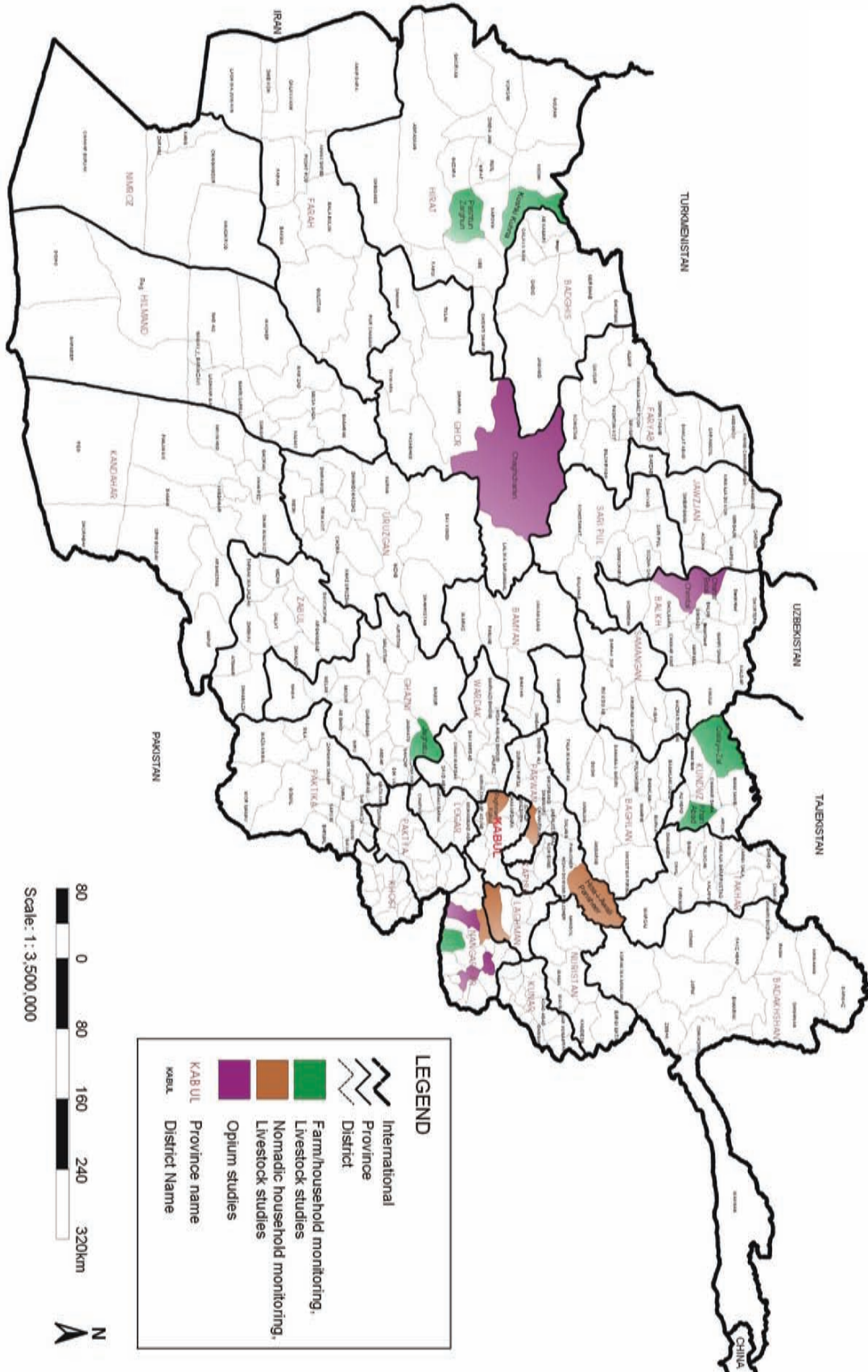
In conclusion, key findings of the WOL study related to rural livelihoods, land tenure, water management, livestock and the opium economy support the government's ongoing efforts to promote pro-poor policies and strengthen the poverty alleviation components of sector strategies. Although AREU's review of current development strategy reveals some potential conflicts between strategy documents and poverty alleviation objectives, the government's stated commitment to pursue an inclusive, balanced agriculture and rural development strategy is encouraging.

The challenge now is to identify implementation approaches that translate strategy and policy into interventions that achieve real improvements in rural livelihoods. Several examples of pro-poor interventions and policies have been presented in this paper. As decision-makers undertake the difficult task of fine-tuning strategies and prioritising future investments, selection criteria and safeguard measures should focus on potential impacts on household risk, rural wage rates and employment opportunities, and access to land and natural resources.



Bringing home the flock in Nangarhar
(Obaidullah Hidayat)

Annex: Map of WOL Research Locations



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