PUBLIC PARTICIPATION TO IMPROVE WATER RESOURCE MANAGEMENT IN UZBEKISTAN

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ABSTRACT

At present in Uzbekistan it is used about 42 km^3 of transboundary rivers flow, 27 km^3 of this is from Amu Darya. Annual average flow entering the upper reaches of Amu Darya within Uzbekistan is over 60×10^9 m^3, which is already contaminated, but significant adverse water quality changes occur downstream where the river is the main source of drinking water supplies. After independence Uzbekistan made a commitment to transfer management of farms and the rural economy from the public sector to private hands. Despite transitional reforms, living conditions have deteriorated severely throughout Uzbekistan, but rural areas have been hit hardest. Several studies and investment projects in Uzbekistan have already addressed issues related to the integrated water management based environmental approach. A structured public participation and consultation process was followed during the projects activities through the social and the environmental assessment. This paper presents the two case studies of the Karshi and South Karakalpakstan regions to illustrate the effects of uniting potential of all interested participants to improve water management and environmental safety. Consultation between the two main groups of stakeholders is essential for the future of the water sector. Their participation can improve their contributions to decision making as well as funding. There is substantial support for WUAs among all stakeholders, at all levels, including among those stakeholders who currently manage the existing system.

KEYWORDS: ***Stakeholder; public participation; social capital; water resource management; contamination; benefit.***

INTRODUCTION

Having the area of 444,410 thousand km^2 Uzbekistan lies in the heart of Central Asia between the Amu Darya and Syr Darya Rivers (see Fig 1). The total population of the country is 24, 300 Million of which more than 61 % is rural. Irrigated agriculture is the foundation of the Uzbek economy, accounting for 35 percent of GDP, 60 percent of foreign exchange receipts, and 42 percent of employment. In the rural areas, irrigated agriculture and the processing of agricultural products is by far the main source of employment and income for the population. [ARAL-PGI (1996)]. Available limit of water resources is completely exhausted and contaminated. Poor irrigation management and deteriorating irrigation and drainage infrastructure in the river basin has led to widespread problems of waterlogging and salinity, reducing yields.

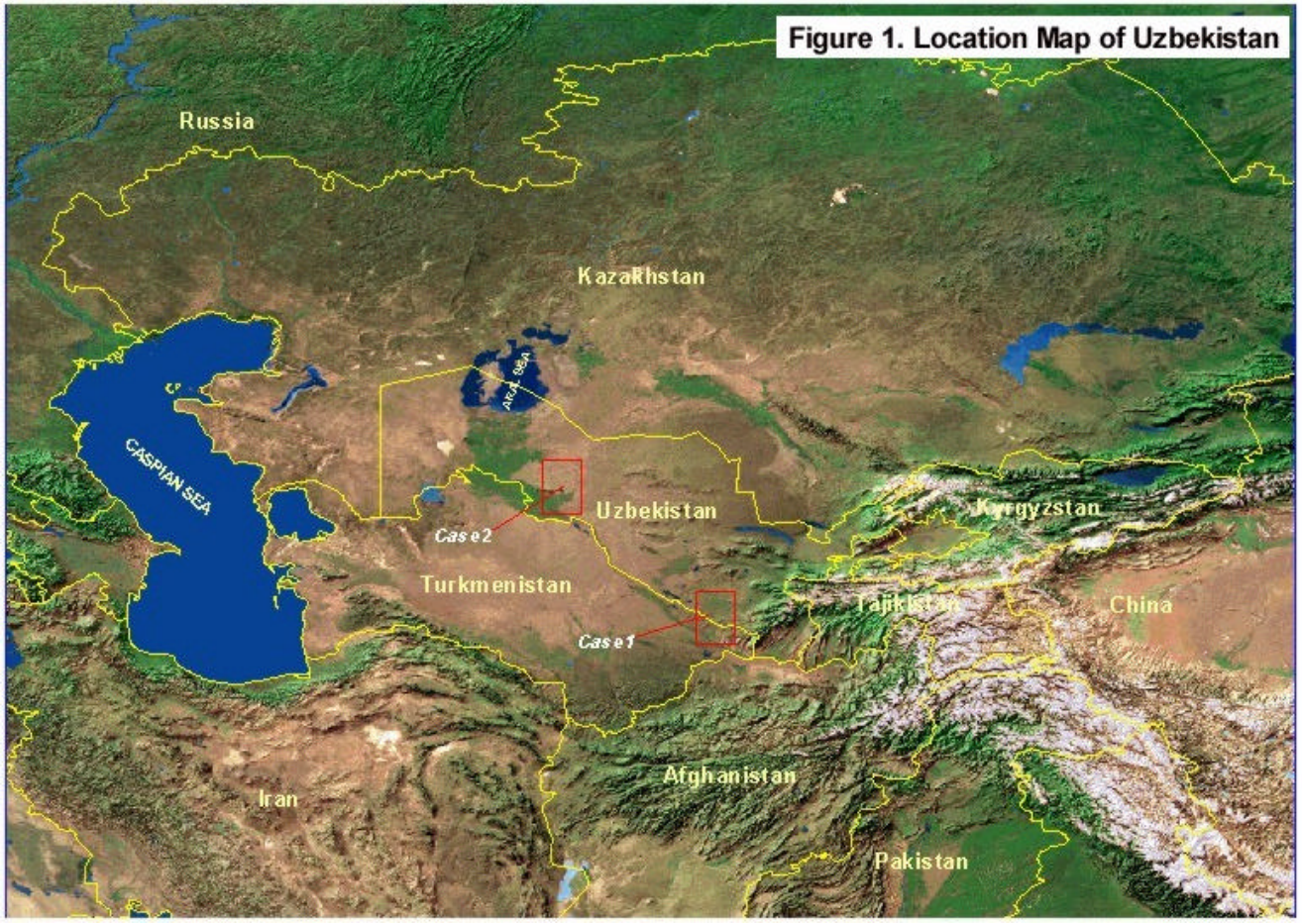
After independence Uzbekistan made a commitment to transfer management of farms and the rural economy from the public sector to private hands. GOU approved and began to implement a number of significant reforms. Despite transitional reforms, living conditions have deteriorated severely throughout Uzbekistan, but rural areas have been hit hardest. Current policies do not give farmers the incentive to optimise output and labour productivity, to the detriment of farmers and, therefore, of the country as a whole. Indeed, worldwide experience shows that rural development has always preceded general economic development [Abdullaev U, Khasankhanova G (2001)].

The requirement to maintain agricultural output in Uzbekistan has little considered the negative effects of diffuse (non-point) sources of contamination including irrigated areas, cattle-breeding farms, petroleum products storage, aerodromes, small settlements and other facilities, which represent serious threats to human health, food, and the environment. Pressure on agriculture lands will be increased due competition between non-agricultural users, population, and soil degradation including development of salinisation and waterlogging, as well as reduction in irrigation water quality and use efficiency [Khasankhanova *et al*., (2001)].

METHOD

Several studies and investment projects in Uzbekistan have already addressed issues related to the integrated water management based environmental approach. Between 1996 and 2000 the World Bank commissioned the Preparation Study of the Uzbekistan Drainage Project [MMTU, (1998)] and Karshi Pumping Cascade Rehabilitation Project [MMTU, (2000)].

A structured public participation and consultation process was followed during the projects activities through the social (SA) and environmental (EA) assessment, through in-depth interviews, focus group discussions and stakeholder seminars. Stakeholders views were divided in two broad categories: (i) water users, especially farmers and heads of collective farms *(shirkats*), who believe the existing system should be reformed, in part by encouraging private sector initiatives and involvement of social structures, such as Water User Associations (WUA's); and (ii) water management specialists who support strengthening the role of the state and the need for more public investment.



RESULTS AND DISCUSSIONS

Both projects are of an emergency nature and will provide the first step towards reform of the irrigation and drainage infrastructure. The institutional changes have considerable financial impact, which, in turn, necessitates changes in prevailing agricultural policies.

Case 1.

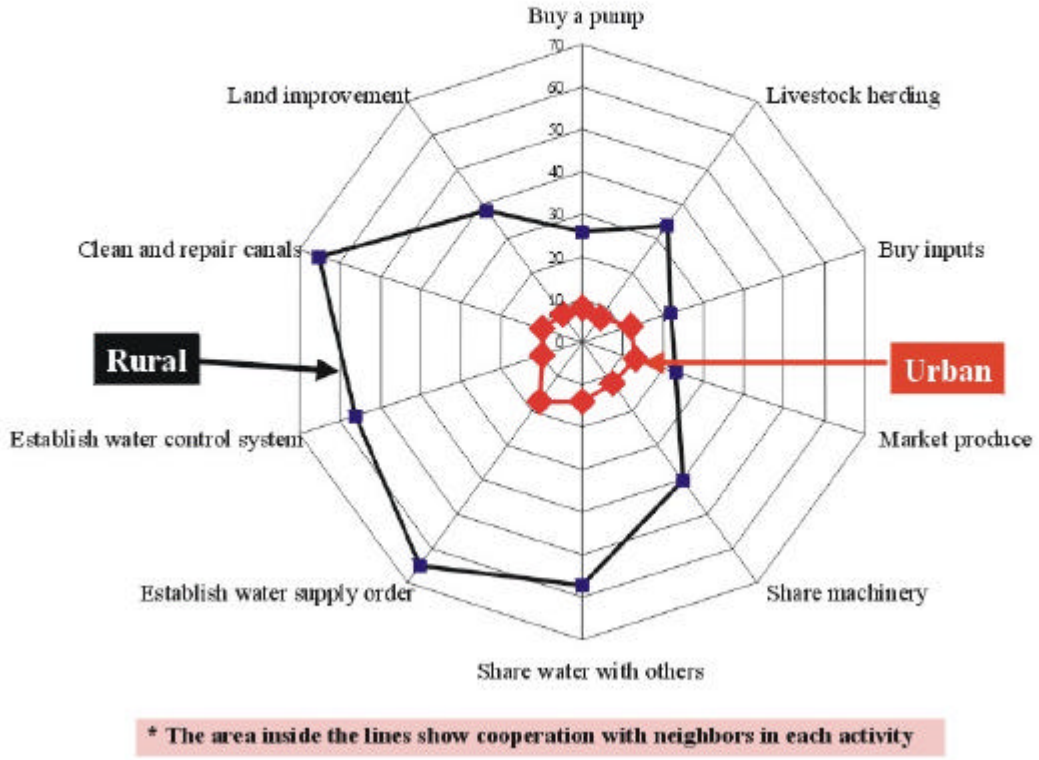
The case study Karshi area is situated on a plateau on the Right Bank of the Amu Darya River. The Karshi Pumping Cascade lifts water from the Amu Darya in Turkmenistan to irrigate around 400 000 ha of the Karshi Steppe in Kashkadarya Provinces of south Uzbekistan (see Fig.2). The area is inhabited by some 1.5 million people who largely depend on this source of water for their livelihood. Much of the cascade was constructed in the early 1970s and its reliability has reduced in recent years as the installed equipment nears the end of its useful life. This, together with a breakdown of the water management practices within Karshi Main Canal (KMC) command area, has resulted in high water losses. The present project is focused on identifying and implementing the immediate rehabilitation needs to secure continued water supplies through the cascade in the short to medium term.

Environmental impacts of the KPC project are considered limited and generally positive. The findings are based on an analysis of the past and current impacts by the KPC on the surrounding environment and by the surrounding environment on the KPC. The EA confirms that the project would not change the quantity or quality of the water in the river basin because it is strictly a rehabilitation intervention. The project has indeed no significant negative environmental impacts, except for certain environmental hazards quite normal during construction, which will be mitigated under the proposed Environmental Management Plan [Karshi-EA, 2002].

A random household survey of 765 people living in both rural and urban settlements in the impact area was carried out as part of the social assessment process. The social survey focused on attitudes towards: (i) the need for potable and irrigation water and water shortage coping strategies; (ii) the role of the state, local governments, shirkats and of farmers in water resources management and agriculture; (iii) potential for conflict over water issues; (iv) trust among stakeholder groups and the availability of social capital; (v) attitudes towards water user associations and other institutional reform issues; (vi) attitudes concerning the future of farming; perceptions of living standards; (vii) women's status in conditions of limited water use and their role in reforming [Karshi-SA, (2001)].

, to joint «patrolling» of canals and social isolation of those who steal water from their neighbours.

Figure 3. Social Capital of Rural and Urban Areas.



The study demonstrates that a large number of people from all social groups support the initiative for establishing non-governmental organizations, which would be central to a practical solution for water management problems. Below is the proposition typical of this group: "*Instead of establishing WUA, I think, water management should be enhanced."(Karshi District).*

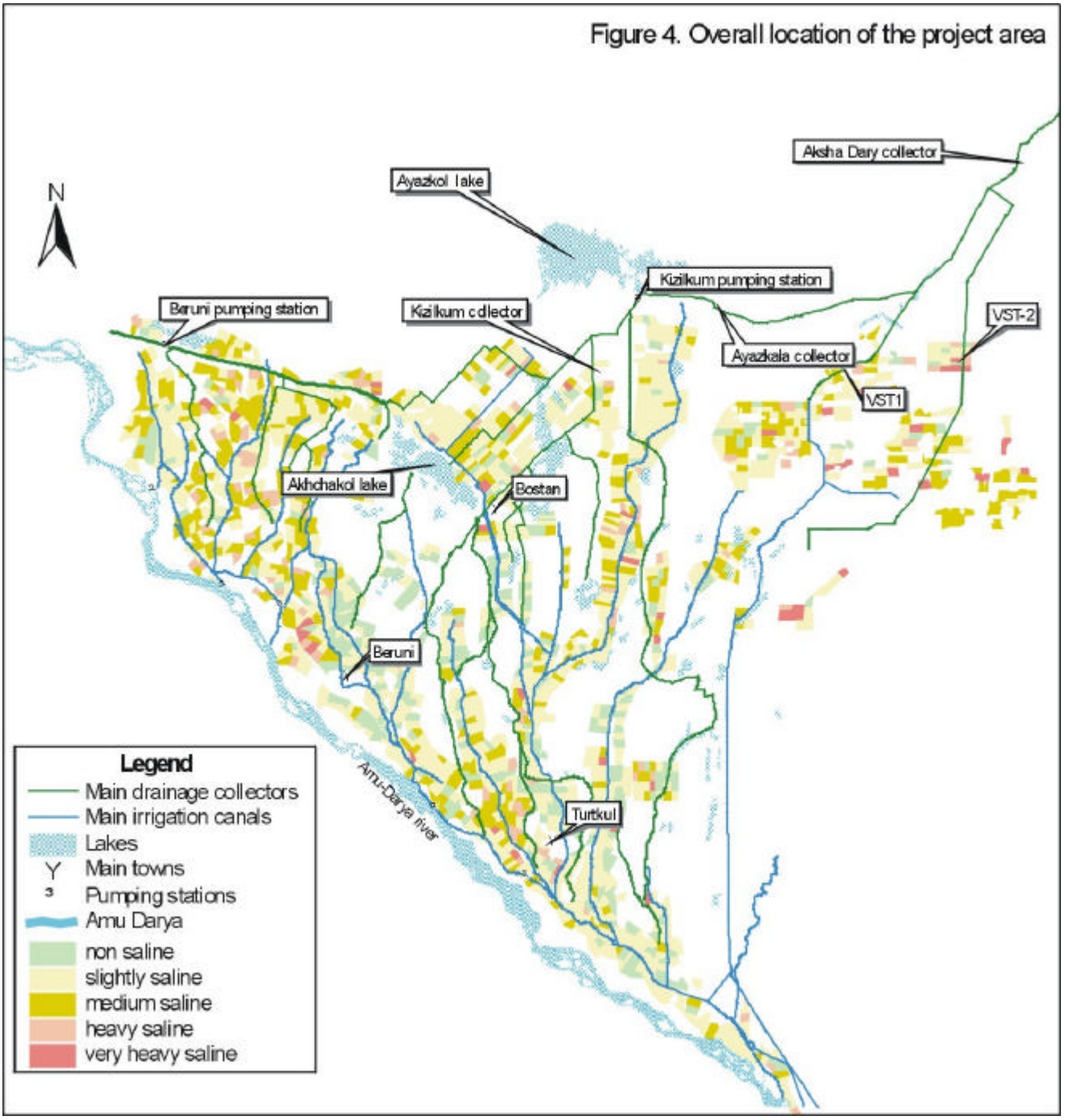
The SA found there is tremendous support for the objectives of the project especially if priority for irrigation is balanced with that for household water. However, few feel that simply providing more irrigation water will lead to an overall improvement for their lives and thus there is substantially more support for the kind of comprehensive approach which should be represented by the longer term multicultural program[Karshi-SA, (2001)].

Case 2.

The case study Beruny Collector area is located in the Amu Darya River delta, which lies in the western part of the Republic of Uzbekistan, and borders the Aral Sea to the North. Total land suitable for irrigation is 250,650 ha, including 100,000 ha currently under irrigation. The climate of southern Karakalpakstan is continental with annual rainfall less than 100 mm. There is two recognized problems: i) poor drainage, which causes water logging and soil salinisation in the irrigated area; ii) the discharge of mineralised CDW to the Amu Darya from the Beruny Collector. The overall location map of the Beruny Collector is presented in Figure 4.

The study of the Beruny Collector catchments investigated two feasible courses of action to improve drainage conditions in the irrigated area and water quality in the lower reaches of the Amu Darya River: *Gravity flow and Pumped drainage variants*. The first option involves disposal of drainage water from south Karakalpakstan to the Aral Sea without using the Amu Darya River. The second option requires the disposal of a significant quantity of drainage water into the Amu Darya River. The agricultural benefits are essentially the same for the two variants [MMTU (1998)].

The main positive and negative impacts of gravity flow and pumped drainage variants are summarized in Table 1.The overall evaluation trends are more favourable for the gravity flow variant, which seems preferential from both the environmental and technical points of view (improvement of drainage conditions, decrease of river contamination, more sustainable in current conditions), and from an ecological point of view (increase of wetlands and biological variety) [IWACO (1998)].



The core project will have a positive impact on the irrigated agriculture in the three district of South Karakalpakstan. All farmers interviewed in this area estimated that they would greatly benefit from proposed core project option. The possible threats to human health linked to animal health would appear to be slightly lower, since these risks are linked to the quantity of water discharged in the Akcha Darya delta. However, preliminary sampling for pesticide residues showed no cause for alarm. The consultation highlighted a number of points, which require consideration and further study. First, it is clear that South Karakalpakstan Collector will benefit several hundred thousand people in terms of improved water quality for agriculture and domestic consumption. The responsible authorities and the NGO community generally support the implementation of the scheme.

LESSONS LEARNED.

Principles of water use formed on the territory the KMC command areas and Beruny Collector System is the result of a multi-century selection of forms of cooperation. Since the main task of people living on this territory was surviving in conditions of insufficient water, following the established rules was and still remains obligatory for all not depending on their ethnic origins.

In spite of the fact that the existing system of water resource administration is intrinsically administrative, in practice, people try to keep centuries-old principles even in its strict frames. The centuries-old experience of water use one

important lessons: «It does not matter to whom water formally belongs, whether it is ample or insufficient in any year, whether its supply to fields is paid fully by agricultural operators or by the state, one can rationally use water without any conflicts only by taking collective decisions at the level of ordinary users as it was done on this land from time immemorial».

Table 1. The basic positive and negative impacts of the alternative variants

Criteria	Gravity flow variant		Pumped drainage variant	
	positive	negative	positive	negative
Soil salinity and water logging	Decreases on 55,000 ha in the irrigated area	Increases from 8,000 to 11,000 ha in the Akchadarya delta	Decreases on 30,000 ha in the irrigated area	Increases from 4,000 to 6,000 ha in the Akchadarya delta
Salt mobilization from irrigated area		Increases of about 2.2 million t per year		Increases up to 2.2 million t per year
The Amu Darya water salinity	Decreases of 0.05 g/l			Increases up to 0.08 g/l
Transformation of pasture to wetlands	An increase of biological variety on 28,000 to 41,000 ha, positive for fishery	A destruction of 28,000 to 41,000 ha of pastures	An increase of biological variety on 6,000 to 9,000 ha	A destruction of 6,000 to 9,000 ha of pastures
Passage /barrier for fishery	An increase of migration area			Minor change
Drinking water quality	A decrease of risk for rural population of north Karakalpakstan (800,000 persons)			An increase of risk for rural population of north Karakalpakstan (800,000 persons)
Threat of cultural heritage		36 monuments along collector		8 monuments along collector

Source: IWACO, Final Report, November 1998

CONCLUSIONS

The two case studies of the Karshi and South Karakalpakstan regions to illustrate the effects of uniting potential of all interested participants to improve water management and environmental safety. Consultation between the two main groups of stakeholders is essential for the future of the water sector. There is substantial support for WUAs among all stakeholders, at all levels, including among those stakeholders who currently manage the existing system.

The privatisation of irrigation management is a key of balancing stakeholder interests, and there is a large potential for water users to participate in these interaction. Their participation can improve their contributions to decision making as well as funding. Social capital facilitates a community's ability to address water issues. The study confirms that water management and environmental safety greatly benefit from comprehensive stakeholder participation.

REFERENCES

ARAL-PGI (1996). Aral Sea Basin Programs. Developing a Regional Water Management Strategy: Issues and Water Plan, the Program Group 1 (Project 1.1) in cooperation with the EC of IFAC, ICWC and the World Bank.

Abdullaev U, Khasankhanova G (2001) Change Towards Sustainable Water Development: Implementation of the Irrigation and Drainage Strategy of Uzbekistan. The 11th Stockholm Water Symposium, Sweden

Khasankhanova G, Abdullaev U, Pavey J, *et al*., (2001). Integrated Solutions for Point and Non-point Pollution in the Amu Darya basin of Uzbekistan, IWA The 5th International Conference on Diffuse Pollution and Watershed Management, Milwaukee, USA

MMTU (1998). Preparation Study for the Uzbekistan Drainage project. Phase II. Mott MacDonald – Temelsu – Uzgipromeliovodkhoz, Progress Report, June.

MMTU (2001) The World Bank Karshi Pump Station Rehabilitation Project, Final report, November

Karshi-SA (2001) The World Bank Karshi Pump Station Rehabilitation Project: Social Assessment Report, Social Assessment Llc, USA & Center for Social Research «Tahlil», Uzbekistan, Final Report, November

IWACO (1998). Environmental Assessment of Irrigation and Drainage in the Amu-Darya River Basin. IWACO in association with Veen Ecology The Netherlands, Italoconsult, Center Ecology for Water Management, SANIIRI, Uzgipromeliovodkhoz. Final Report.

Karshi-EA(2002). The World Bank Karshi Pump Station Rehabilitation: Environmental Assessment Final Report, February.