

**Joint Areas  
of Case Studies:**

East Africa  
Horn of Africa  
West Africa  
South-East Asia  
South Asia  
Central Asia  
Central America  
and Caribbean  
South America  
Switzerland

## **Project Title**

**Evaluation of Agroforestry Technologies and  
Approaches to Prevent Natural Hazards in Erosion  
and Mass Wasting Prone Areas of Tajikistan**

**PAMS No. CAS-3\_01**

**Final Report**

**CAMP Kuhiston (Republic of Tajikistan)**

**JACS – CAS**

**Date April 2011**

## Introduction

This final report is to be jointly prepared by the executing agency and the responsible NCCR North-South researcher. Once you have finished the report, please send it to your Regional Coordinator. If you have any questions, please do not hesitate to contact the PAMS team: [pams@cde.unibe.ch](mailto:pams@cde.unibe.ch).

<b>1. Basic Information</b>	<i>Title of project:</i> <b>Evaluation of Agroforestry Technologies and Approaches to Prevent Natural Hazards in Erosion and Mass Wasting Prone Areas of Tajikistan</b>	
	<i>PAMS No.:</i> CAS-3_01	
	<i>JACS/country:</i> CAS/ Tajikistan	
	<i>IP, TN:</i> CDE/TN3	
	<i>Main objective of the project/programme:</i> <b>Proposed project as an input to a major national reforestation initiative set up in Tajikistan in 2009 and be an integral part of the start of the WOCAT process within Tajikistan.</b>	
	<i>Start of Project:</i> <b>February 2010</b>	<i>End of Project:</i> <b>March 2011</b>
	<i>Total PAMS budget in Swiss Francs according to proposal:</i> <b>46'440</b>	
	<i>Partners' and/or other donors' contribution (calculated in Swiss Francs):</i> <b>10'000</b>	
	<i>Executing agency :</i> <b>Public organisation CAMP Kuhiston</b>	
	<i>Main National Partners :</i>	<i>Main International Partners:</i>
<ul style="list-style-type: none"> <li>• <b>Tajik Soil Research Institute</b></li> <li>• <b>Horticulture Institute</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>NCCR North-South</b></li> </ul>	
<i>Sources of information for the final report:</i> <b>Interim report, Reports of specialists involved into project activities</b>		
<i>Written by (name of author(s) / organisation):</i> <b>Mirzokurbon Pochoev CAMP Kuhiston</b>		

<b>2. Outcomes achieved</b> (max. 2 pages)	<p>This chapter provides a clear and concise analysis of the effects (outcomes) of the project. It also includes considerations on the contribution of research to PAMS, and the effects of the PAMS on research.</p> <p><i>1. Description of intended and unintended effects (outcomes) of the PAMS:</i></p> <p><i>a) What are the direct and indirect, positive and negative effects of the project?</i></p> <p>Positive:</p> <ol style="list-style-type: none"> <li>1. Active participation and involvement of villagers into the project activities.</li> <li>2. Brouchures on Soil and Water Conservation, and Fruit Tree Cultivation were developed. These were not just distributed through the project but through to other organisations working in this field.</li> <li>3. About 100 of participants received training in 5 Soil and Water Conservation workshops</li> </ol>
---	--

	<ol style="list-style-type: none"> <li>4. 115 of participants received training in 5 Fruit Tree Cultivation workshops.</li> <li>5. Beneficiaries expressed their wish to have more informative brochures on fruit cultivation.</li> <li>6. During a short period of ten days about two thousand seedlings were planted by the community. (Apple, Quince, Cherry, Peach, Pear, Walnut, Plum)</li> <li>7. 50% of fencing was installed by the community.</li> <li>8. It is estimated that over 90% of the seedlings are in good health after one year.</li> <li>9. The information from the project was added into the WOCAT database.</li> <li>10. The community and especially the land owner's have a strong sense of responsibility towards the trees.</li> <li>11. The Horticulture Institute can now provide better guidance on the types of trees to be planted in this environment. It is clearly apparent that some of the trees struggled during the heavy rains in May 2010 and others flourished.</li> <li>12. The Soil Research Institute learnt how to work as part of an external team outside of the university setting.</li> <li>13. Soil Research Institute has learnt that the use of language for the publication of brochures and posters has to be simplified to be effective at the community level.</li> <li>14. The employment of a fruit tree technician to undertake regular visits was invaluable in maintaining the high level of participation and pre-empting problems.</li> <li>15. Farmers from two areas were trained on using drip irrigation techniques, due to the lack of provision for the lack of water.</li> <li>16. An active relationship was established with the government bodies to help with further interventions and projects.</li> <li>17. Provided invaluable insight into how to implement projects in a very poor district without causing too much conflict and disturbance.</li> <li>18. Farmers in the subsequent year were provided with extra seed to plant between the trees to improve the soil quality and diversification in the area.</li> </ol> <p>Negative:</p> <ol style="list-style-type: none"> <li>1. There was little involvement of women into the project. The area is very conservative and the men are very dominant in the society. Even though the women do not attend the workshops, they are actively engaged in the day to day care for the trees.</li> <li>2. Due to the bad weather condition workshops were conducted after planting of seedlings. This is unfortunate in its timing, but the follow-up support from the tree technician means that there has been a substantial amount of hands on training in the orchards.</li> <li>3. All the fruit trees have taken root, there were issues with some of the trees due to heavy rains in May 2010, in particular this effected the peach trees.</li> <li>4. It is apparent that fruit trees are in demand as the local government initially wanted more control over the location of the orchards. The government wanted to allocate the trees thereupon some heavy discussion followed as to why certain members of the population were selected. It had to be repeated several times that the land was selected on an established criteria.</li> <li>5. All areas are well fenced; however in one location animals broke through the fencing and stripped the leaves of the trees. The fencing was fixed and the trees are re-growing.</li> <li>6. Two of the sites would have benefited from a water pipe for irrigation purposes. It was explained from the outset that these pipes would be the responsibility of the land owner. However, the land owners hung onto the belief that the pipes would be provided. This has proved a small point of conflict.</li> <li>7. The provision of fencing for the project has been expensive, but essential to the success of the project. The lack of wood in the area limited the amount of natural fencing provided.</li> </ol>
--	---

*b) To what extent did it achieve its planned objectives (comparison “planned – executed” according to proposal)?*

The project achieved all the objectives according to the original plan. It was decided to plant in seven different sites instead of five, however, the total number of trees remained the same.

There were delays in the conduction of the workshops due to the political unrest during the August - October 2011.

*c) An approximate analysis of costs/benefits of achieved outcomes: are the inputs reasonable in relation to the results achieved?*

The project was costed accordingly, it was apparent that to achieve a successful approach and outcome that funds have to be spent on the planning stage, whereby MoUs are established with land owners, government bodies, and academic institutions. The final budget was a reasonable expense for the development of capacity of the institutions, the land owners, the workshop participants and the all other project implementers. It will also serve as an invaluable step in further work in these communities and improve the capacity of the organisations for more effectively implementation in the future.

**2. Contribution of research to the outcomes of PAMS and effects of PAMS on research.**

*a) What is the contribution of NCCR North-South research to the outcomes of the PAMS?*

The project approach and technologies was entered into the WOCAT database. This project has helped develop the capacity of the stakeholders to enter further data from other projects and help with the big issue of knowledge management within the country. It should be stated that CAMP Kihiston and the Soil Institute are actively participating in entering data into the WOCAT database, this exercise is strongly linked to this project.

*b) What was the project’s effect on research?*

The project provided a unique opportunity for three institutions to collaborate together under a research project and its hoped that further funding will be secured to continue this collaboration.

There were a couple of key findings:

‘We checked and came to a conclusion that these seedlings have fungus disease - klyasteriosporioz and monolioz. Other types of seedlings had no any signs of disease. Treatment of seedlings against fungus was organized by specialist from Horticulture Institute’- there appears to be a high prevalence of fruit tree disease in the Rasht valley, it is therefore imperative that measures are taken to prevent disease from effecting healthy saplings.

It was also apparent that Peach trees are the least suitable for this climatic environment with the heavy rains in May.

The project was also able to build upon the agroforestry experiences of Beda Roma (2008) who used espercet and alfafa to help fix nitrogen into the soil between the trees. This researcher indicated that the fruit trees would develop at a rate 10% faster/stronger, than is nitrogen fixing plants are not used.

	There was also an exchange visit between CAMP Kuhiston staff and Caritas staff from Muminobod to share experiences in fruit tree planting. The issues of approach to implementation and the differences in the technology due to the climatic conditions helped develop an understanding of the issues.
--	---

<p><b>3. Outputs and performance, partners and context</b> (1 to max. 1.5 pages)</p>	<p>This chapter gives a clear and concise overview of factors that supported or impeded outcome achievement; changes of general conditions and context; and gender aspects:</p> <ol style="list-style-type: none"> <li>1. <i>Summary of the <b>main outputs</b>: what are the main tangible products (goods, services) of the project? What is the <b>outreach</b> of the project (e.g. what population groups, geographic area, and institutional levels did it cover)? Please be concise, because the focus of the report should be on the effects (chapter 2). Where planned outputs were not achieved, please explain why.</i> <ol style="list-style-type: none"> <li>1. The project was implemented in 2 Jamoats (village administrations), Hakimi and Mudjiharf in the Nurobod district of Tajikistan. The combined population is around 30,000.</li> <li>2. The project was implemented in 5 villages.</li> <li>3. It directly benefited 7 families with 200-400 fruit trees.</li> <li>4. 7 agroforestry systems containing mixed fruit trees to prevent natural disasters, protecting infrastructure, houses, farm land, farm animals etc.</li> <li>5. 5 workshops for villagers on Fruit Tree Management and 5 workshops on Soil and Water Conservation (5 days each, 20-22 participants) were conducted.</li> <li>6. A review and improvement of the training material and the respective courses, especially more interactive training for the fruit tree course.</li> <li>7. The Soil Institute and the Horticulture Institute benefited from increased capacity building by working in collaboration with International Consultants.</li> </ol> </li> <li>2. <i>Summary of the <b>contributions</b> of various partners and specific contribution of NCCR North-South.</i> <p><b>Farmers (7 families)</b> - The farmers provided time and labour to the successful implementation of the project as an outcome farmer's knowledge in correct choice of varieties, planting of seedlings and grooming of young orchards through participation in 'Cultivation of fruit trees' and 'Water and Soil conservation' seminars was improved.</p> <p><b>Local Jamoat (2 jamoats)</b> - The Jamoats helped in the documentation of the site selection, the distribution of seedlings to farmers and the organization of seminars was made jointly with representatives of Jamoats. Memorandum of Understanding and Cooperation which was signed between CAMP and local authorities helped fertile cooperation with local self-governance.</p> <p><b>Soil Institute (3 specialists)</b>- members of the Soil Institute conducted soil analysis in several of the plots.</p> <p><b>Horticulture (2 specialists)</b> - members of the Horticulture Institute developed one brochure on cultivation of fruit trees. This brochure includes information on planting, pruning, diseases, and storage of fruit. The Horticultural specialist also re-developed the modul on Fruit Tree Cultivation, to ensure it was more practical and relevant to the farmers. One of the Horticultural specialist provided continual monitoring through out the project.</p> <p><b>CAMP Kuhiston</b> - CAMP redeveloped their module on soil and water conservation methods and produced a new brochure to complement the training material. Two moderators conducted the training in five villages. CAMP also undertook the project</p> </li> </ol>
--	--

	<p>management of the contract and were responsible for the liaison between the different parties.</p> <p><b>International Experts</b> - provided advice and assistance during the project on the development of the moduls, brochures, soil analysis and methodology. Their main role was to support the local staff in the implementation of the project and not to undertake specific tasks or implementation roles.</p> <p>3. <i>Information on <b>transformations of context</b> if these was significant for the evolution of the project (implementation and results).</i></p> <p>The context in which the project was implemented was not significantly transformed, however, the level of participation and support improved throughout the project as trust and understanding developed.</p> <p>4. <i><b>Gender:</b> What are the effects of the project/programme with regard to the reduction of inequalities between men and women? Did women benefit at least equally from the project/programme in comparison to the men?</i></p> <p>The implementation of the activities encountered several problems. Female do not participate in the activities undertaken like seminars on the cultivation of fruit trees and water and soil conservation. However they do tend the plants.</p> <p>Active participation of women would need more time to collaborate, conduct meetings and discussions with the communities. The women benefited directly by the individual attention of the tree specialist during his frequent visits during the project.</p>

<p><b>4. Lessons learnt</b> (1 to max. 1.5 pages)</p>	<p>This chapter summarises the main lessons learnt during the implementation of the project in this phase:</p> <p>1. <i>Description of relevant <b>aspects that have contributed to the success/failure of the project.</b> Among others consider aspects such as:</i></p> <ul style="list-style-type: none"> <li>- <i><b>Thematic approach</b></i></li> <li>- <i>Description of main <b>innovations</b></i></li> <li>- <i><b>Partnership(s)</b></i></li> <li>- <i><b>Communication</b></i></li> </ul> <p><i><b>Thematic approach</b></i></p> <p>The approach to bring together all the organisations and government bodies was difficult due to external demands. Also the trust between the organisations needed to be built. There was also conflict in the selection of the location for the fruit tree cultivation. At the beginning of the project activities in this district the Jamoats were unhappy at their lack of involvement in the process. However, having developed a basic criteria for assessment this process was justifiable.</p> <p>The signing of agreements and MoUs was essential to the success of the project, this approach would have to be adopted for further replication.</p> <p><i><b>Innovations:</b></i></p> <p>The main innovation was the linking of fruit tree cultivation as a means to reduce the risk from Natural Hazards and raising the level of understanding between all vested parties.</p>
---	--

The linking of the institutions appeared to be a new initiative and the continued support of the Horticultural expert was essential to build upon the training provided. This approach should be replicated.

The selection of fruit trees for slopes that may present a natural disaster hazard, will be monitored, but the development of plans appeared to be a new concept in this area.

### ***Partnership(s)***

The partnering arrangements were established through MoU, however they could have been improved by stronger contracts with regards to timings and outputs from each partner. This was a learning experience and will help in implementation of future ventures. The project would have benefited from further field trips to the sites during selection of locations and during the monitoring process. The disturbance due to the political unrest hampered this process.

### ***Communication***

Oral communication between the partners was generally fine, but the written level and timing of the reports could be improved. Again this could be rectified through several means such as stronger project management, more specific contracts and additional support to the local partners on report writing skills and requirements.

### ***2. Description of main difficulties faced during the project.***

The communities are busy collecting pasture and grazing livestock in the summer pastures during the months July and August. Additionally there were delays in delivering services by specialists because of their employment at the Institutes. Another problem was the increasingly tense political situation in the area, this was why visits in August were postponed and the final workshops conducted in March 2011.

The information and time required for the completion of the WOCAT was underestimated, but has been invaluable learning and subsequent projects will be entered into the WOCAT database whenever possible.

### ***3. Where is the project with regard to continuation / sustainability?***

CAMP will continue to work in these two watersheds and are hopeful of a small fund (12,500 USD) to implement other soil and water conservation techniques during the summer of 2011.

The research is documented through WOCAT, the approach, the technology of planting the trees and the use of drip irrigation.

Jepchott Foundation from UK funded Energy Efficiency project submitted by CAMP Kuhiston. In 2011 CAMP master will train villagers (masters) to build energy efficiency stoves in PAMS villages. Use of energy efficiency stoves by villagers will decrease cutting of trees, decrease use of tapak which will be used to fertilize during tree cultivation.

### ***4. Where is the project with regard to replicability and scaling up?***

The relations with the local government were strengthened and CAMP Kuhiston will continue conduct monitoring with involvement of tree technician specialist to check fruit trees. The project has been a steep learning curve in project management due to the number of stakeholders and beneficiaries. However, based upon this experience and knowledge from this project CAMP has applied to several other donors to replicate this project in the same area.

It has also been encouraging to see that within the communities themselves there has been some further planting of trees in the same villages that received the trainings and support.

--	--

5. Budget	Budget items	budgeted		actual	
		PAMS	Total (incl. co-funding)	PAMS	Total (incl. co-funding)
	a) salaries and consultancy fees	16680		14457.8	
	b) equipment	9400		8447.11	
	c) consumables	6650		5592.11	
	d) travel expenses and daily subsistence allowances	7080		6958.93	
	e) miscellaneous (taxes, VAT, etc.)	6630.22		7314.55	
	f) RCO monitoring				
	<b>Total</b>	<b>46440.22</b>		<b>42770.5</b>	
	Balance	<b>3669,79</b>	--		
<p>Please explain significant deviations (&gt;20 %) from the budget. Was the budget adequate? Were there any financial shortcomings? If so, what was their consequence on project implementation?</p>					

<p><b>5. RC and HIP assessments</b> (max. 1 page)</p>	<p>This chapter summarises the assessments of the HIP and RC:</p> <ol style="list-style-type: none"> <li><i>What were the strengths of this project?</i> <i>RCHIP: : Involvement of local farmers in the tree planting and their capacity building in SWC technologies</i></li> <li><i>What were the weaknesses of this project?</i> <i>RC:</i> <i>HIP:</i></li> <li><i>Do you have any additional comments?</i> <i>RC:</i> <i>HIP:</i></li> </ol>
---	--

<p><b>6. Assessment by PAMS Coordinator</b> (max. 0.5 page)</p>	<ol style="list-style-type: none"> <li><i>What were the strengths of this project?</i></li> <li><i>What were the weaknesses of this project?</i></li> <li><i>Do you have any additional comments?</i></li> </ol>
---	--

