

Participants assessing their natural resource use and energy consumption for the previous year 2010 (Shane Stevenson (Camp Kuhiston, Dushanbe))

Participatory Cost Benefit Analysis for Energy Efficiency Measures (ຕາຈິກິສະຕານ)

ຄອອະທິບາຍ

The use of a cost benefit analysis approach to assess the financial and natural resource needs for energy consumption at community level, and further attribute costs to SLM practices to meet this need, and subsequently improve rural livelihoods.

Aims / objectives: To collate quantitative data on the amount of energy used within the community in terms of financial expenditure and natural resource use. Through the use of a participatory workshop the attendees determine which natural resources are being utilised, in the form of wood, bush and organic materials. The objective is to use this quantitative data to encourage through cost benefit demonstrations, the implementation of Sustainable Land Management technologies to reduce the amount of natural resources exploited, and the expenditure on energy consumption.

Methods: An energy specialist organises a community based workshop with up to 15 participants. In the 2-3hr workshop the participants complete, under guidance, a pre prepared flip chart on energy use (electric, tapak, wood, coal, brush). The information is collected in financial expenditure and weight. Once the energy assessment is completed a subsequent discussion is encouraged on how to more effectively meet this need at a community level. The moderator also takes this oppoprtunity to demonstrate several technologies including solar lights, improved stove design, thermal insulation, and the development of energy forests. The information is collated and used as a baseline assessment for evaluation of implemented technologies.

Stages of implementation: The stages of implementation are relatively straight forward. First you must select the community that you wish to work in, and inform a community mobiliser, in this case the head of the village that you wish to conduct a 2-3 hr workshop for up to 15 participants, and that the participants must be the person in the households who is responsible (or has knowledge of) the energy use within the household. The moderator prepares a flip chart with a table of fuel types used in the village and uses this as the basis of the workshop to extract information on energy use within the community. Once the information is collated, a discussion is encouraged to review the information and devise means by which this amount can be reduced. The moderator then takes this opportunity to demonstrate several low cost energy efficiency measures that may appeal to the community.

Role of stakeholders: The community are expected to attend the workshop, engage in active discussions on their energy use and ways in which it can be reduced. The workshop needs to be supported by the local government, this provides gravitas, and a platform to launch the approach in other communities. The final stakeholder is the implementer, in this case a local NGO who organises the workshop, demonstrates the technologies and provides ongoing support during the implementation of the technologies.

Other important information: It is important to understand the spending habits of the participants, if they are used to spending on a day to day basis and not used to financial planning, it is important to recognise this fact in the implementation of the technology.

ສະຖານທ



ສະຖານທື: Nurobod, Shaftuti Bolo, RRS, ຕາຈິກິສ**ະ** ຕານ

ການຄັດເລືອກພື້ນທື ທືອີງໃສ່ຂໍ້ມູນທາງຜູມີສາດ

• 69.51083, 38.50198

ວັນທີ່ເລືມຕຶນ: 2011

ປີຂອງການສິ້ນສຸດ: 2012

ປະເພດຂອງແນວທາງ

ทค

- ພ<u>ນີ[</u> ອົງ / ຫອີງຖມີ ການລິ[ຫຼື ພາຍ[ນປະ[] **ຫຫຼີ**ຫຼົນມາ / ນະວັດຕະ
- 🔲 ພາຍ 🛛 🖸 ຄງການ/ 🗋 ຜນງານ



Participants assessing their natural resource use and energy consumption for the previous year 2010. (Shane Stevenson (Camp Kuhiston, Dushanbe))

🛛 🖸 າຍຂອງ ນວຫຄຼັງ ລະການປອຍັກຮັກສາສັ ຫຼັ ວດສົມ

ເປົ້າໝາຍ / ຈຸດປະສົງຫຼັກໃນການຈັດຕັ້ງປະຕິບັດແນວທາງ

The Approach focused mainly on SLM with other activities (Energy Conservation)

There were two main objectives to this approach, the first was to raise awareness on energy use with respect to types of energy, cost and accessibility, and to use this as a platform for encouraging the implementation of low cost energy efficiency measures in the community. The second was to collate baseline data to allow an assessment of how the implemented technologies impacted on energy (and by association natural resources) use and how the expenditure and amounts were reduced in real terms.

The SLM Approach addressed the following problems: This approach was designed to make the participants evaluate and assess the amount of money, time and effort that goes into meeting their energy needs. It is also a clear and precise way to collate information on the amount of natural resources that are been used to meet this need. These natural resources can be in the form on bushes, wood, dung, cotton sticks etc. These resources are being redirected from other purposes such as construction, but also as natural fertilisers, mulch and compost. This directly impacts on agricultural production, household finance and ultimately livelihoods. The reduction in resource use can reduce the risk of conflicts between villages, and reduce pressure on natural resources allowing them to rejuvenate, and increase soil fertility and quality.

ເງືອນໄຂທືສະໝັບສະໝຸນໃຫ້ການຈັດຕັງປະຕິບັດເຕັກໂນໂລຍີ ບິນພື້ນຖານແນວທາງ

ເງືອນໄຂທືເຊື່ອງຊັອນໃຫ້ການຈັດຕັງປະຕິບັດເຕັກໂນໂລຍີ ບິນພື້ນຖານແນວທາງ

- ສັງຄົມ / ວັດທະນະທຳ / ມາດຕະຖານ ແລະ ຄຸນຄ່າທາງສາສະໝາ: Rural communities emerging from the soviet system have very low business awareness. Even when there are seemingly obvious savings to be made in finance and natural resources there is a lack of appreciation of the potential savings that could be made. Treatment through the SLM Approach: Discussion on the issue of savings in time, money and resources helps promote better understanding. The concept of pay back had to be repeatedly explained.
- ລຽກ, ມີກຳລັງຄົນ: There are times of year when the village participants are otherwise distracted by sowing seeds, harvesting, Ramadan etc. Treatment through the SLM Approach: The most effective time would be at the end of the winter period when resources are scarce, money constraints are more apparent and energy use is a household priority issue.
- ອື່ນໆ: In many of the households the men are working away in Russia. This leaves the women in charge of the household, however, many of the energy costs are organised by the men before they leave or on their return. Treatment through the SLM Approach: Many of the labour migrant leave in the springtime, therefore it would be more effective to organise the workshops at the end of the winter before they leave.

ການມສີວິນຮວິມ 🛛 ລະມຸດົບາດຂອງພາກສ່ວິນຫຼຄີ 🗋 ວອີງຫມືສີວິນຮວິມ

ພາລະບົດບາດຂອງພາກສ່ວນທືກ່ຽວຂ້ອງ ທືມີສ່ວນຮ່ວມໃນການຈັດຕັ້ງປະຕິບັດແນວທາງ

ແມ່ນໃຜ / ພາກສ່ວນໃດ ທືເປັນເຈົ້າການ ໃນການ ຈັດຕັ້ງປະຕິບັດ ວິທີການ?	ລະບຸ ພາກສ່ວນທືກ່ຽວຂ້ອງ	ພັນລະນາ ບົດບາດ ໜ້າທີ່ ຂອງພາກສ່ວນທື່ກ່ຽວຂ້ອງ
ຜฏิก] ຊີນ] ນ≣ງຖິນ / ຊຸມຼຊນທອງຖິນ	A representative from each household in the community was involved. Women hold a traditional role in the society and did not participate in the workshops. The men pay all the bills and see their role as that of the provider for the family. The entire village suffers from mass labour migration, with nearly all households reliant upon remittances from Russia.	
ຜຊື່[] ວຊານການນຄມີຄອງ ທີ່[ິນ]] ບບຍືຍ[]/ ຫຍື່ມີສາດຄຸ້ນ ກະສີກຄົ		International support and finance was provided for this approach, however, the questionnaire was developed in collaboration between national and



Participants assessing their natural resource needs for heating, cooking and lighting. (Shane Stevenson (CAMP Kuhiston))

		international staff to ensure relevance and
		applicability to the context.
ອ[]ການຈັດຕັຖ]ຫ []]] ມີຂັ ບລັດຖະບານ	CAMP Kuhiston	

ອົງການທືເປັນຕິວແທນໃນການຈັດຕັງປະຕິບັດ

CAMP Kuhiston

ການລວບລວມເອົາຜູ້ນໍາໃຊ້ທີ່ດິນໃນທ້ອງຖືນ/ຊຸມຊົນທ້ອງຖືນ ໃນການຈັດຕັ້ງປະຕິບັດແນວທາງ ແຕ່ລະໄລຍະ



ແຜ່ນວາດສະແດງ

The project employs an energy specialist to conduct a participatory workshop. The process is supported by the local government.

they were active in the participation in the workshops and the collation of data.

Active in providing follow-up data to evaluate the success of the project.



ជ😰 🛛 มS. Stevenson (CAMP Kuhiston, Dushanbe)

ການຕັດສີນໃຈໃນການເລືອກເຕັກໂນໂລຍີ່ ການຄຸ້ມຄອງທື່ດິນແບບຍືນຍົງ

ການຕັດສີນ] ຈ] ດຍ

- ແມ່ຢ_ ສູກແມ່ ສູກມາສູ ສູບເລີ້ຄາຍ
- ຜฏ∩_ 🛛 🛱 ຄິ້ນຫັ້ກົ, ການສະ[ັບສະ] __ນດຍຊຶ່] ວຊານການນາ[] 🖉 ຄິ້ນ] ບບຍົ Π ຍງ
- ພາກສຽນກ[ວຊີງທັງ] ດີ, [້ຟສຽນ] ທີ່ຂອງວິທຫຼາງ] ບບສີຽນຮຽມ
- ຜ໘∏ ວຊາໝັ່ງຄົດຄົນການຄມີຄອງ ຫຄຼິ່ນ∏ ບບຍຼຍຄູ່, ມກຼົານຕິດຕາມປກິສາຫາລກຼັບ ຜ**ມ**ຄ] **ຊີ**ຄົນ
- ຊ []ວຊສະ] ພາະຫຼົນການຄມີຄອງ ດິນ [] ບບຍົຍຫຼືສ່ງ [] ວ
- ນັກການ[**ອ**ງ / ຜ**D**ອ

ກາັ**ມສິ**ນ∏ ຈµົພພີຖານ

- ປະ[] ມີ[] ອກກະສານຄວາມຮຫຼື[] ວັນ ການຄມີຄອງ ຫງິນ[] ບບມີຍ]ີ[(ຫັຫຼືຖານຫ]] ຊຸ[]ຍ[] ນການັດສິນ[] 🤊
 - ຜฏิท∏ ສີບ ຈາກການຄฏิຄວฏิ
- ປະສຽການສຽນບ[]ກຫຼື 🛛 ລະຄວາມຄິດ[]ັຫ (ຫຍຼື][ັງຫຼືປອກກະສາ).

ການສະ[ັບສະ] [ັນຖີ]ເພ] ລົ⊠່ານສ∮ງຄວາມອາດສາມາດ [ລະການຄມີຄອງຄວາມຮ]

ກິດຈະກຳ ດັ່ງລຸ່ມນີ້ ແມ່ນເປັນຜາກໜຶ່ງຂອງແນວທາງ

- 🔲 ການສອງຄວາມສາມາດ / ການຝອຍອິຮມ
- ການບ[ີລານ] ສົງປູນສາ
- ສະຖາບັນການສຽງຄວາມ 🗍 😰 🛛 ຂຽການພັດທະນາອຽການຈັດຕັຽ ຕິດຕາມກວດກາ 🛛 ລະປະ🗌 ມີຜນີ
- ການຄມີຄວໆ Π

ການສ້າງຄວາມອາດສາມາດ / ຝຶກອິບຮີມ

່ ໄດ້ສະໜັບສະໜູນຝຶກອິບຮີມໃຫ້ ແກ່ພາກສ່ວນກ່ຽວຂ້ອງດັ່ງລຸ່ມນີ 🔲 ຜ[]ຼາ 🗐 🗐 ນ

ພະນັກງານພາກສະ[າມ ທ∐ີ່ฏສາ

ຊັດແດດນູນກູພູນອູດຊູກ

ການ[**ີສ**ຕ[ວິຈິງ nongo 🗌 🖪ຫສີວນຫຼືລອງ ກອງປະຊຸ∏ Π

ຫັฏສ]ດ

ກວມເອົາຫິວຂັ

The training included raising awareness on stove adaptation, indoor two room stove construction, solar power, and low cost thermal insulation for rooms.

ສະຖາບັນ ໄດ້ຮັບການສ້າງຄວາມ ເຂັມແຂງ ບີີມ ມີຟສີມີຄວນ ມີຫີີາະ	ໃນລະດັບດັ່ງລຸ່ມນີ້ ਗ਼េ 8월ງຖິຍ ລະດັບພາກພຍ □ ଶີຊາດ	ອະທິບາຍສະຖາບັນ, ພາລະບົດບາດແລະຄວາມຮັບຜິດຊອບ, ສະມາຊິກ, ແລະອືນໆ.
ຮູບແບບການສະໝັບສະໝູນ ຫາງດຽນການ[] ຫຼ ການສຽງຄວາມອາດສາມາດ / ການຝ ຍ[ປະກອນ	DeDaD	ລາຍລະອຽດເຜີມເຕີມ The Jephcott Foundation financed local NGO CAMP Kuhiston to implement the approach.

socio-cultural aspects were regular monitored by project staff through observations; indicators: Observations of participants understanding of economic benefits. management of Approach aspects were ad hoc monitored by None through observations; indicators: international staff monitor the set up of the workshops and levels of participation. There were few changes in the Approach as a result of monitoring and evaluation: The timing of the workshops (i.e the time of year) will be changed to the end of the winter when energy use is more of a priority issue, e.g. cold weather, poor electric supply, lack of easily accessible natural resources There were no changes in the Technology as a result of monitoring and evaluation: None

ການຄົນຄວ້າ ການວິ[] ຈ[ອີອການຮັກສາຫມືຂຍິ[][ປມີ]] ສັງຄມີ]] ສດຖະສາດ ການຕະຫ[]າດ ລະບຢູນິ] ວດ]] [ີ ຫ]] ນ] ລິຢ	CAMP Kuhiston collated data on energy usage and by association natural resource use. In addition to the participatory workshop CAMP conducted a household questionnaire to assess the suitability of different energy efficiency technologies, and the social vulnerability of the inhabitants, to identify the most effective households to implement energy saving activities.			
	Research was carried out on-farm			
ການສະ[ັບສະ] [ມທ າຫຼົມ ການ[ິ ຫຼ] ລະຍ]ປະກອນຈາກພາຍນອກ				
ງິບປະມານປະຈຳບີ ໃນກິດຈະກຳ ການຄຸ້ມຄອງທືດິນແບບຍືນຍິງ ທືເປັນ ການບໍລິການ ຫຼື ສຶງກະຕຸກຊຸກຍູ້ ດັງລຸ່ມນີ້ ແມ່ນໄດ້ສະໝອງໂດຍຜູ້ນຳ				

ສະກຸນເງິນໂດລາ < 2,000 2,000-10,000 10,000-100,000 100,000-1,000,000 > 1,000,000 Precise annual budget: n.a.

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Approach costs were met by the following donors: international non-government (Jephcott Foundation, UK): 100.0%

ການບໍລິການ ຫຼື ສືງກະຕຸກຂຸກຍູ້ ດັງລຸ່ມນີ້ ແມ່ນໄດ້ສະໝອງໂດຍຜູ້ນຳ ໃຊ້ຫຼືດິນເອງ

- ່ ການສະ[ີ້ບສະ[[ໝາງດຄົນການ[ິນູ/ອ[ປະກອນສະ] ອງ[[ຫໝົມຄົທຄົ່ນ ■ ຫ[**ີດຢັ ຈ⊡] ຍຶ** ສີນ] ຫຼື
- 👖 ສີ່ຖືຈ[]ງ] ຫ🕕 ຍິງມອີນີ[]



🛛 ຮງງານຂອງ**ຫຼື** 🛛 🖉 🗍 ນ

ການອາສາ ລ[] ງ[ຖືຂອາຫານ ຈຖີຍ[]້ຟ]ີ ກູສຖີ] ອີບການສະ[ີ້ບສະ]] [ຟຼ]ປະກອນຫຼືນອ]]

ສືງກະຕຸກຂຸກຍູ້ອື່ນໆ

The Jephcott Foundation financed local NGO CAMP Kuhiston to implement the approach.

ການວິ[] ຄາະຫຼັກະທ2] [] ລະສະຫ[][ບລວມ

ຜົນກະທິບຂອງການນຳໃຊ້ແນວທາງ



ການຈັດຕັຖປະຕິບັດ ວິຫຫຼາງ ສາມາດຊຸຊົຍຜ**ົ**ນຄາ ເຫຼີຍິນ 🛛 ນການັດຕັ້ຖປະຕິບັດ 🗋 ລະມ 🗠 າລ**ີໂກສ**າ 🗍 ໍ່ຫ 🗋 ນ 🗋 ຊີໜ່ນຄມີຄອງ ຫຼືມີນ 🗋 ບບມືຍ 🗍 🗗 The extent to which it will reduce the amount and type of natural resource use will be re assessed at the end of the project. It is estimated that there will be a 20% reduction.

ການຈັດຕັຖປະຕິບັດ ວິຫຫຼາງ ສາມາດສອງຄວາມ[ີອີ] ຂາຫາງສັງຄມີ [ລະຍິ ສດຖະິກບໃ]] The approach was implemented in a socially disadvantaged area.



ສືງກະຕຸກຊຸກຍູ້ໃຫ້ຜູ້ນຳໃຊ້ທີ່ດິນ ໃນການປະຕິບັດການຄຸ້ມຄອງທີ່ດິນ ແບບຍືນຍິງ

- ການຜະລິດ[ມູຂມ ການ ເວັດ[ມູຂມ ຫຼີງອີດເມືອນ (ຄວາມສາມາດ), ການປັບປ[ງອີ] ອີຼມີຍ, ຜມປະ[ຫຍຸດອັດຕາສລິນ ຫຼີງອີ່ພິດວາມສ[] ງຂອງ]ີພັດ ການຫຼີງອີຫພາລະວ] ກ
 - ການຊຄົລະ[ິ ຫຼ / [ິ ຫຼອ[]ດ[] []ນ ກຄວະນຸດ ນຸດ ລະລະນຸດ ນູທອນ
- ກຄູລະບົບ ບົບ ລະລະບົບ ບາໝາຍ ທີ/ ການບັງຄັບ ຊຶ ກີ ດັສສາ ລວມມາຄິດັນທາງສັງຄມ / ການຕິດຕຫຼືກຼືຫາງສັງຄມ ລວມ ອື່ນຄືກັນກັບການ ອື່ນ ຫາ ລີ ຄງການ ກມ / ອີຂຄຼຍ ຄວາມຮັບຮອທາງສາ ວດສົມ ພາສ[]] ລະຄວາມ ອື່ຖືສມີບັດສີນຫຄື ການບັບປົງຄວາມເຫຼັງາມ ການປັບປ່ງຄວາມເຫຼັງາມ ການປັບປິງຄວາມເຫຼັງາມ ທາຍອາຍແຂຊີດ ຫຼື well-being and livelihoods improvement

ບດີສະຫ∏∭ບລະມດີຮ∏ ນທີ່ ຮີບ

ຄວາມເຂັ້ມແຂງ: ທັດສະນະມູມມອງ ຂອງຜູ້ນຳໃຊ້ທີ່ດິນ

• Quick and simple way to put an economic cost on fuel use.

ຍວາກເຮັກແຮວ: ທຼຸບສຸຂກະກຳກາອວ ຮອວຜູ້ດຸອກຮູກັກເອວ

- The approach needs minimal resources and is relatively easy to implement. (How to sustain/ enhance this strength: It would be easy to replicate and easy to teach others how to undertake the approach.)
- It makes participants evaluate what they need to run their households, and puts an economic and natural resource value on the process.
- It helps focus the participants on how much time, effort and money are being used to run their household. (How to sustain/ enhance this strength: To follow up, to see how effective the implementation of the technologies was in reducing their energy needs.)
- The scope of the level of participation is flexible and can be adapted to the contexts. It allows for direct comparison for before and after the implementation of the technology. (How to sustain/ enhance this strength: It could be further developed to put an economic value on SLM technologies.)

🛛 ອກກະສານອົງອງ

ການລວຍລວມ shane stevenson Editors

ການທິຍທວນຄືນ David Streiff Alexandra Gavilano Joana Eichenberger

ວັນທີຂອງການປະຕິບັດ: April 27, 2011

ปัยปุวฺฉ่าสุด: Nov. 2, 2021

ບຸກຄົນທື່ສຳຄັນ

shane stevenson (stevenson.shane.p@gmail.com) - ຜ່ອີຼີ ວຊານກ່ຽນການຄມີຄອງ ຫຼີຄິນ[] ບບມີຍຸໂ] Mirzo Pochoev - ຜ່ອີ[] ວຊານກ່ຽນການຄມີຄອງ ຫຼີຄິນ[] ບບມີຍຸໂ]

ການບັນຍາຍລາຍລະອຽດ ໃນຖານຂໍ້ມູນ ຂອງ WOCAT

https://qcat.wocat.net/lo/wocat/approaches/view/approaches_2442/

ຂ້ມູນການເຊືອມໂຍງຂ້ມູນການຄຸ້ມຄອງການນຳໃຊ້ດິນແບບຍືນຍົງ

Technologies: Two Room Stove https://qcat.wocat.net/lo/wocat/technologies/view/technologies_1518/ Technologies: Energy efficiency measures to increase the application of organic fertilisers. https://qcat.wocat.net/lo/wocat/technologies/view/technologies_1050/

ເອກກະສານ ແມ່ນໄດ້ອຳນວຍຄວາມສະດວກໂດຍ

ສະຖາບັນ

• CAMP - Central Asian Mountain Partnership (CAMP - Central Asian Mountain Partnership) - ភាគ្នីតព័រ

🛛 ຄŋານ

• Pilot Program for Climate Resilience, Tajikistan (WB / PPCR)

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ຄວາມຍື້ນຍິງຂອງການຈັດຕັ້ງປະຕິບັດກິດຈະກຳຂອງແນວທາງ ຜ[ຼທີ] ອຼີຄິນ ສາມາດຈັດຕັ້ຫຼປະຕິບັດຕາມ] ນວຫາງ]]ເດງຟຸ]]ດຍປາດສະຈາກການ ສະ]] ບສະ]]]ນຈາກພາມົສພາຍນອກ)?

ດ[]ີກ]ກ [] ກ]ກ ຄ**]]**ກ

> ຈຸດອ່ອນ / ຂໍ້ເສຍ / ຄວາມສ່ຽງ: ທັດສະນະມູມມອງ ຂອງຜູ້ນຳໃຊ້ທີ່ດິນ ວິທີການແກ້ໄຂແນວໃດ

ຈຸດອ່ອນ / ຂັເສຍ / ຄວາມສ່ຽງ: ທັດສະນະມຸມມອງ ຂອງຜູ້ປ້ອນຂໍ້ມູນ ເອງວິທີການແກັໄຂແນວໃດ

• It requires participants to have good quality data available to be effective. Complete follow up visits to households to check data quality.