Land Users of Rikhey-Domphu Milk Group (Tshering Yangzom)

Improved Livestock Farming System (Bhutan)

Rigsar Gi Thokley Gonor Sochong Baethang (རིགས་གསར་གྱི་ཐོན་ལས་སྒོ་ནོར་གསོ་སྐྱོང་འབད་ཐངས།)

DESCRIPTION

The approach involves a group of farmers implementing an improved dairy system. The system incorporates practices and technologies that enhance animal welfare, reduce environmental impact, and increase production.

This case describes how a group approach can facilitate and encourage improved dairy production with better sheds, more productive breeds, environmental sustainability and marketing. Upgraded dairy production is described in detail under the technology “Improved dairy sheds” (T6898).

Initially, the land users were a part of a bigger milk group established in 1993. In 2017, some detached themselves and formed “Om Nyamdel Tshogde” which is a group composed of 67 members from Rikhey and Domphu chiwogs, led by a Chairperson, Mrs. Yangzom. The group also has a treasurer, Drungchen, and a driver. The main objective of forming the milk group was to improve the livelihoods of land users through higher yields via better livestock farming. The group formation process was assisted by the livestock extension officer. The funding was mobilized from the community itself.

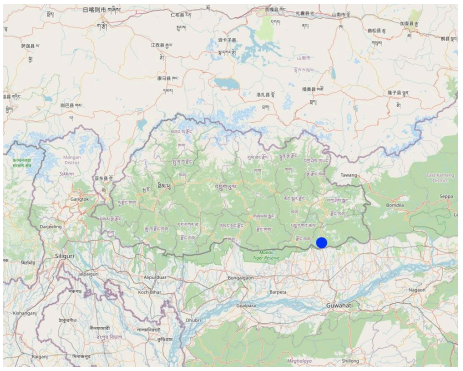
The group members, with some support from the government, constructed improved dairy sheds, and biogas plants, and received training on fodder plantations. The stakeholders involved were land users, livestock extension officers, and the private cooperative B-COOP. The land users' role is to coordinate and conduct activities related to livestock farming. The extension officer's role is to provide veterinary and technical services. B-COOP's role is to buy dairy products from the group, especially milk.

The group members have installed improved dairy sheds with cemented floors, feeding troughs, corrugated galvanised iron (CGI) roofing, and a continuous water supply. Also, cattle have access to timely veterinary services. Cow dung and urine are used as fertilizers and also in biogas plants. Biogas plants generate renewable energy (methane), thereby cutting down the use of liquefied petroleum gas (LPG) gas which is derived from fossil fuel.

Under improved dairy sheds, stall-feeding is practised which bars the cattle from going to forests to feed. This prevents the degradation of land by cattle movement through trampling. For better nutrition and feeding, grass fodder species including Super Napier (pakchung), Napier, and Guatemala are grown, cut and and fed to cattle. In addition, other feeds provided included banana stems, maize stems, maize powder, mustard cake, and processed feeds. The group delivers at least 300 litres of milk per day to B-COOP, and some milk goes to India.

Improved breeds have replaced numerous low-yielding local cattle thereby making more efficient use of cattle feed. Also, fewer, more productive animals help reduce environmental degradation and methane losses to the atmosphere. The majority of cattle reared have been bred through artificial insemination. Most cattle are 50:50 hybrids between local breeds and improved breeds such as Jersey. Improving the breeds helps to increase milk production (e.g Holstein Friesian) and or percentage butter fat (e.g. Jersey). To feed and sustain productive, improved breeds, various fodder species are cultivated in large areas. This helps in carbon sequestration and preventing soil erosion.

LOCATION



Location: Kheripam village, Domphu chiwog, Dewathang gewog, Samdrup Jongkhar Dzongkhag, Bhutan

Geo-reference of selected sites

- 91.53619, 26.86058

Initiation date: 2017

Year of termination: n.a.

Type of Approach

- ☐ traditional/ indigenous
- ☑ recent local initiative/ innovative
- ☐ project/ programme based

What the land users like about the approach is that improved livestock farming results in a continuous source of income, as milk production is not seasonal like vegetable production, it provides organic fertilizers for fields, improves livelihoods, makes use of waste such as cow dung in biogas plants which means reduced dependency on LPG gas which is quite expensive. Also access to credit is increased. Government support has increased after the milk group formation. Furthermore, the workload is shared among the land users, especially during the making of biogas plants, thus easing the workload per person.

Land users of Rikhey-Domphu milk group (Tshering Yangzom)

Improved dairy shed of land user Tshewang Zangmo (Tshering Yangzom)

APPROACH AIMS AND ENABLING ENVIRONMENT

Main aims / objectives of the approach

The main aims of the approach are to enhance the overall well-being of animals, optimize animal production, minimize forest grazing and promote continuous stall feeding, increase the availability of FYM and urine for application to fields, develop pasture with fodder grasses, foster efficient waste utilization, provide a comfortable working environment for land users, and improve the livelihoods of land users through higher yields and better household income.

Conditions enabling the implementation of the Technology/ ies applied under the Approach

- **Availability/ access to financial resources and services**: There is assured monthly income for the land users due to the supply of milk to B-COOP and India.
- **Institutional setting**: There is assured monthly income for the land users due to the supply of milk and other dairy products to B-COOP and India. This has helped improve the livelihoods of land users through higher yields and better household income.
- **Collaboration/ coordination of actors**: There is labour sharing in the group (for example in the construction of biogas plants) thereby easing the workload in the group. The milk group is collectively run by the land users. Every land user is equally involved in meetings related to the group. The land users also share experiences and ideas, resulting in continuous improvement. All these enhance collaboration/coordination among the land users.
- **Policies**: The government has supported the land users by providing deep freezers and other livestock farming construction materials free of cost.
- **Knowledge about SLM, access to technical support**: The land users realize the importance of improved livestock farming systems and biogas plants. They also have access to advisory services from the livestock extension officer.
- **Markets (to purchase inputs, sell products) and prices**: The group sells dairy products to Bhutan (B-COOP) and India, especially milk and generates income. The group has access to different markets which might have been difficult for individual farmers to have access to.
- **Workload, availability of manpower**: There is labour-sharing in the group (for example in the construction of biogas plants) thereby easing the workload in the group.

Conditions hindering the implementation of the Technology/ ies applied under the Approach

PARTICIPATION AND ROLES OF STAKEHOLDERS INVOLVED

Stakeholders involved in the Approach and their roles

What stakeholders / implementing bodies were involved in the Approach?	Specify stakeholders	Describe roles of stakeholders
local land users/ local communities	The land users of Rikhey-Domphu chiwogs.	Collectively produce milk (at least 300 L/day).
SLM specialists/ agricultural advisers	Livestock extension officer.	Provide technical support to land users.
private sector	Bhutan Cooperative (B-COOP)	Buy milk from the group.

Involvement of local land users/ local communities in the different phases of the Approach

	none	passive	external support	interactive	self-mobilization	
initiation/ motivation			✓			The livestock extension officer proposed the formation of the milk group.
planning				✓		The livestock officer and land users planned the group management plan.
implementation					✓	The land users carried out the fieldwork of producing milk and constructing improved dairy sheds and biogas plants.
monitoring/ evaluation					✓	The land users monitor their group activities.

Flow chart

Decision-making on the selection of SLM Technology

Decisions were taken by
- ☐ land users alone (self-initiative)
- ☑ mainly land users, supported by SLM specialists
- ☐ all relevant actors, as part of a participatory approach
- ☐ mainly SLM specialists, following consultation with land users
- ☐ SLM specialists alone
- ☐ politicians/ leaders

Decisions were made based on
- ☑ evaluation of well-documented SLM knowledge (evidence-based decision-making)
- ☐ research findings
- ☐ personal experience and opinions (undocumented)

TECHNICAL SUPPORT, CAPACITY BUILDING, AND KNOWLEDGE MANAGEMENT

The following activities or services have been part of the approach
- ☑ Capacity building/ training
- ☑ Advisory service
- ☑ Institution strengthening (organizational development)
- ☑ Monitoring and evaluation
- ☐ Research

Capacity building/ training

Training was provided to the following stakeholders
- ☑ land users
- ☐ field staff/ advisers

Form of training
- ☐ on-the-job
- ☑ farmer-to-farmer
- ☑ demonstration areas
- ☑ public meetings
- ☐ courses

Subjects covered

-Biogas plant construction
-Fodder grass plantation

Advisory service

The land users have access to advisory services from the livestock extension agent.

Advisory service was provided
- ☑ on land users' fields
- ☑ at permanent centres

Institution strengthening

Institutions have been strengthened / established

- [ ] no
- [ ] yes, a little
- [ ] yes, moderately
- [x] yes, greatly

at the following level

- [x] local
- [ ] regional
- [ ] national

Describe institution, roles and responsibilities, members, etc.

There is assured monthly income for the land users due to the sell of milk and other dairy products such as cheese and butter.

Type of support

- [x] financial
- [ ] capacity building/ training
- [ ] equipment

Further details

Monitoring and evaluation

FINANCING AND EXTERNAL MATERIAL SUPPORT

Annual budget in USD for the SLM component

- [x] < 2,000
- [ ] 2,000-10,000
- [ ] 10,000-100,000
- [ ] 100,000-1,000,000
- [ ] > 1,000,000

Precise annual budget: n.a.

There is no annual budget allocated for the construction of improved dairy sheds and biogas plants. For biogas plant construction, pipes, metals, and 15 bags of cement were provided to land users by the government. For dairy shed construction, roofing material (18 CGI sheets) and 18 bags of cement were provided. These materials were provided by the government only once. There is no annual providing of materials or money to the land users.

The following services or incentives have been provided to land users

- [x] Financial/ material support provided to land users
- [x] Subsidies for specific inputs
- [x] Credit
- [ ] Other incentives or instruments

Financial/ material support provided to land users

For biogas plant construction, pipes, metals, and 15 bags of cement were provided to land users by the government. For dairy shed construction, roofing material (18 CGI sheets) and 18 bags of cement were provided. Also, deep freezers were provided to the land users.

	partly financed	fully financed
Deep freezers		✓
Cement bags CGI sheets Pipes Metals A part of these materials was financed by the government.	✓	

Labour by land users was

- [x] voluntary
- [ ] food-for-work
- [ ] paid in cash
- [ ] rewarded with other material support

Credit

Conditions: Nu 20,000 credit
Credit providers: BDBL
Credit receivers: Land users

IMPACT ANALYSIS AND CONCLUDING STATEMENTS

Impacts of the Approach

	No	Yes, little	Yes, moderately	Yes, greatly
Did the Approach help land users to implement and maintain SLM Technologies? Improved livestock farming system has promoted technologies such as improved dairy sheds and biogas plants.				✓
Did the Approach improve knowledge and capacities of land users to implement SLM? The land users have adopted technologies such as improved dairy sheds and biogas plants.				✓
Did the Approach build/ strengthen institutions, collaboration between stakeholders? The land users have been able to sell milk and other dairy products to B-COOP and India and this has helped the land users generate income. Also, B-COOP and India have benefitted from the continuous milk supply from the milk group. The milk group has helped in forming a partnership between the land users and the buyers.				✓

Did the Approach mitigate conflicts?
The land users have developed pasture land of Super Napier, Napier, and Guatemala grasses for stall feeding of cattle. This has minimized the issue of cattle entering other land users' fields and foraging on the crops.

Did the Approach empower socially and economically disadvantaged groups?
Land users from different backgrounds are now part of the milk group.

Did the Approach improve gender equality and empower women and girls?
Land users in the milk group are a mix of males and females. There is no gender discrimination.

Did the Approach lead to improved food security/ improved nutrition?
Land users have assured monthly income due to the sale of milk and other dairy products. This has led to better household income. Also, stall feeding under an improved dairy shed has promoted the cultivation of fodder of good quality and variety leading to increased and quality milk production.

Did the Approach improve access to markets?
Land users now sell milk and other dairy products to B-COOP and India.

Did the Approach lead to more sustainable use/ sources of energy?
Biogas plants have reduced the use of LPG in some households.

Did the Approach lead to employment, income opportunities?
Group marketing has helped land users earn better.

Main motivation of land users to implement SLM

- [x] increased production
- [x] increased profit(ability), improved cost-benefit-ratio
- [x] reduced land degradation
- [ ] reduced risk of disasters
- [ ] reduced workload
- [ ] payments/ subsidies
- [ ] rules and regulations (fines)/ enforcement
- [ ] prestige, social pressure/ social cohesion
- [ ] affiliation to movement/ project/ group/ networks
- [ ] environmental consciousness
- [ ] customs and beliefs, morals
- [x] enhanced SLM knowledge and skills
- [ ] aesthetic improvement
- [ ] conflict mitigation

Sustainability of Approach activities

Can the land users sustain what hat been implemented through the Approach (without external support)?

- [x] no
- [ ] yes
- [ ] uncertain

CONCLUSIONS AND LESSONS LEARNT

Strengths: land user's view

- Government support especially to groups.
- Easy access to market because of group formation.
- Improved livelihood of farmers through higher farm yields and better household income.
- Use of a renewable of energy like biogas instead of LPG.
- Improved health and animal welfare.

Strengths: compiler's or other key resource person's view

- Knowledge sharing (land users can share their ideas and experiences while working in a group).
- Improved dairy shed made of cement, gravel, and stones is more durable than the old dairy shed made from wood.
- Availability of good quality fodder and a diverse range of forage options.
- Increase in organic matter due to FYM application and better soil moisture retention by increased soil organic matter.
- Reduced labour due to reduced fodder collection and herding in the forest.
- Efficient waste utilization.
- Reduced land degradation due to reduction in forest grazing.
- Increased vegetation cover due to improved pasture development and reduction in forest grazing.
- Less soil compaction through decreased trampling by animals.
- Comfortable working environment for land users.

Weaknesses/ disadvantages/ risks: land user's viewhow to overcome

Weaknesses/ disadvantages/ risks: compiler's or other key resource person's viewhow to overcome

- Sometimes working in a group can be difficult. Internal conflicts and misunderstanding are common in group ventures. Regular group meetings and guidance by extension staff.

REFERENCES

Compiler
Tshering Yangzom

Editors
chenga Tshering

Reviewer
William Critchley
Rima Mekdaschi Studer
Joana Eichenberger

Date of documentation: Aug. 23, 2023

Last update: May 30, 2024

Resource persons
Yangzom - land user
Tshewang Zangmo - land user
Wangdi - land user
Jampel - land user
Tendel Zangmo - land user
Cheki Wangmo - land user

Full description in the WOCAT database
https://qcat.wocat.net/en/wocat/approaches/view/approaches_6895/

Linked SLM data
Technologies: Improved Dairy Shed https://qcat.wocat.net/en/wocat/technologies/view/technologies_6898/
Technologies: Improved Dairy Shed https://qcat.wocat.net/en/wocat/technologies/view/technologies_6898/

Documentation was faciliated by

Institution
- National Soil Services Center, Department of Agric (National Soil Services Center, Department of Agric) - Bhutan

Project
- Strengthening national-level institutional and professional capacities of country Parties towards enhanced UNCCD monitoring and reporting – GEF 7 EA Umbrella II (GEF 7 UNCCD Enabling Activities_Umbrella II)

Key references
- Thapa, L., Choden, D., & Tamang, N. B. (2019). Adoption of Improved Dairy Production Practices by Dairy and Non-Dairy Farmers' Groups.: https://www.researchgate.net/profile/Lokey-Thapa/publication/334507972_Adoption_of_Improved_Dairy_Production_Practices_by_Dairy_and_Non-_Dairy_Farmers'_Groups/links/5d2ec146299bf1547cbd248a/Adoption-of-Improved-Dairy-Production-Practices-by-Dairy-and-Non-Dairy-Farmers-Groups.pdf