



The field of one of the community members where the Climate Smart Agriculture was implemented. (Tshering Zangmo)

Climate-Smart Village Approach (Butão)

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DESCRIÇÃO

Climate change has become inevitable, and there is a need to address this impending danger. In the Climate-Smart Village (CSV) approach, land users in Ngaru-Pongtang have implemented several technologies and innovations to address climate change impacts, and the programme has worked with 50 households on a total area of 137 acres (55 ha).

This approach focused on transforming Ngaru-Pontang into a Climate-Smart Village (CSV) with actions that also contribute to mitigating climate change. The programme has worked with 50 households on a total area of 137 acres (55 ha). The approach included a participatory vulnerability assessment, and extensive training and education for the land users. They were equipped with skills, technologies, and innovative practices related to climate-smart agriculture (CSA). Additionally, the approach emphasized collaborative efforts, working closely with community members to foster better engagement and cooperation.

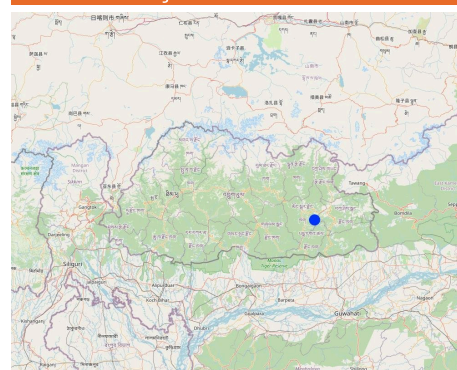
The primary objectives of the approach were to transform Ngaru-Pontang village into a CSV and thus effectively address the challenges posed by climate change. To achieve these goals, the approach employed various methods. It involved meetings with the community members, vulnerability assessment, fostering collaboration between the community, Agriculture Research and Development Centre (ARDC) Wengkhari, and Commercial Agriculture and the Resilient Livelihood Enhancement Programme (CARLEP). The community members received comprehensive training and attended workshops on climate-smart agriculture practices. The implementation of the approach adopted the following stages:

1. Resource and livelihood analysis carried out through a Participatory Vulnerability Assessment.
2. Based on the findings from the above assessment, a project proposal was submitted to secure funding.
3. Subsequently, discussions were held with the community members, the extension agent, and the local government to ensure collective agreement and support.
4. A detailed plan with a timeline was developed to guide project implementation and monitoring.
5. Training and workshops on CSA practices were conducted by the ARDC and the extension agent, empowering the community members to take charge of project implementation and ensure sustainability.

Key stakeholders involved in the approach included:

1. ARDC Wengkhari, which led the implementation of the project, facilitated the training and workshops, provided technical assistance, and monitored the programme's progress.
2. The Gewog administration and the extension agent played crucial roles by offering support and assistance in implementing climate-smart agriculture practices in the field.
3. The community members actively participated in various program activities, playing a pivotal role in driving the project forward.

LOCALIZAÇÃO



Localização: Ngaru-Pongtang village, Thangrong gewog, Mongar Dzongkhag, Butão

Geo-referência de locais selecionados

- 91.35503, 27.19169

Data de início: 2016

Ano de término: 2021

Tipo de abordagem

- ☐ Tradicional/Indígena
- ☐ Iniciativa/Inovação local recente
- ☒ Baseado em projeto/programa

4. The Commercial Agriculture and Resilient Livelihood Enhancement Programme (CARLEP) acted as the funding agency.

The key CSA practices implemented through this approach are soil fertility improvement technologies (composting through use of FYM and bio-slurry, vermicomposting; liquid manure, biochar, Bhutan Agri-Microbial Solution (BAMS) and hedgerow plantations), community solar-electric fencing, heat and drought tolerant crops (spring paddy, soybean, avocados, mangoes and pineapples), biogas installations and establishment of weather station.

The implementation of CSA interventions has resulted in a wide range of impacts on livelihoods, income, and enhanced climate resilience. The diversification of crops, electric fencing, and improvement in irrigation have enabled farmers to expand their cultivation area thereby directly enhancing crop production and cash income. Similarly, the integration of improved livestock farming systems along with crops and the installation of biogas plants have reduced impacts on natural resources. Farmers have gained knowledge and exposure to different climate-smart agriculture practices. The only negative impact of the measures has been extra damage to crops by wild animals.



Ngaru-Pongtong community members (Lhap Dorji)



Enumerators and community members in one of the fields where CSA was implemented (Tshering Zangmo)

OBJETIVOS DE APROXIMAÇÃO E AMBIENTE PROPÍCIO

Principais metas / objetivos da abordagem

The main objective of the approach was to establish Ngaru-Pongtang as a CSV and showcase different CSA practices geared towards combating, mitigating and addressing climate change impacts, which can be replicated to other gewogs and Dzongkhags.

Condições que permitem a implementação da Tecnologia(s) aplicada(s) sob a Abordagem

- **Disponibilidade/acesso a recursos e serviços financeiros:** Community members were provided with equipment and planting materials through project's support.
- **Quadro institucional:** Local government and gewog agriculture extension agent were involved during the training, seminars and the implementation of the project activities to ensure ownership and sustainability of the project.
- **Colaboração/coordenação de atores:** Stakeholders (ARDC Wengkhari, local government and community members) participated and cooperated together during the entire project period.
- **Conhecimento sobre GST, acesso a suporte técnico:** ARDC Wengkhari provided regular training and workshops with regard to climate-smart agriculture, good agricultural practices and sustainable land management for the successful implementation of the project.
- **Mercados (para comprar entradas, vender produtos) e preços:** ARDC Wengkhari has facilitated agricultural marketing by linking up the community with Bhutan Agro-Industry located at Lingmethang, Mongar.

Condições que dificultam a implementação da Tecnologia(s) aplicada(s) sob a Abordagem

PARTICIPAÇÃO E PAPEL DAS PARTES INTERESSADAS ENVOLVIDAS

Partes interessadas envolvidas na abordagem e seus papéis

Que partes interessadas/órgãos de implementação estavam envolvidos na abordagem?	Especifique as partes interessadas	Descreva o papel das partes interessadas
Usuários de terra/comunidades locais	Ngaru-Pongtang community	As a beneficiary, participated actively in the planning and implementation of the project activities, ensuring the project was successful and beneficial to them.
Pesquisadores	ARDC Wengkhari	Led the implementation of the project; facilitated the training and the workshops; provided technical

		assistance to the program; and monitored the progress of the program.
Governo local	Gewog administration and gewog agriculture office	They provided administrative support and collaborated with other stakeholders in successful designing and implementation of the project activities.
Organização internacional	International Fund for Agricultural Development (IFAD)	IFAD provided financial assistance through its Commercial Agriculture and Resilient Livelihood Enhancement Programme (CARLEP)

Envolvimento do usuários de terra/comunidades locais nas diferentes fases da abordagem

	Nenhum	Passivo	Apoio externo	Participativo	Automobilização
Iniciação/motivação		✓			
Planejamento				✓	
Implementação				✓	
Monitoramento/avaliação				✓	

The local community members were informed verbally and through community meeting about the project.

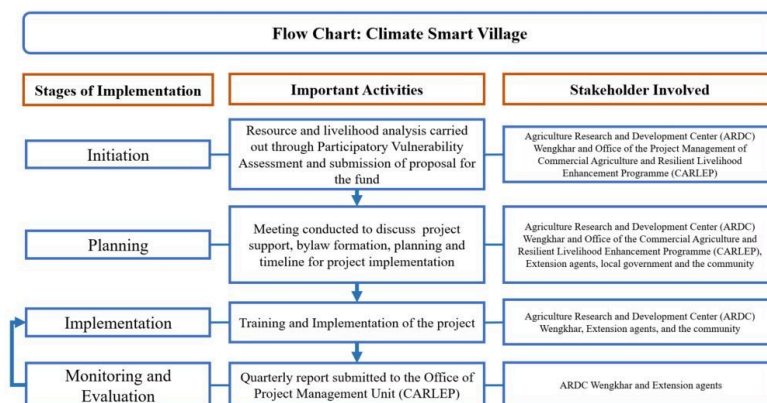
ARDC Wengkhlar, Thangrong gewog administration, gewog agriculture extension agent and the community members came together and discussed the way forward for the project.

Community members were provided with training and workshops on climate-smart agriculture and related agricultural skills. After the training and demonstrations, land users were divided into groups and made to apply these skills in their field.

Monitoring is being sporadically conducted by ARDC Wengkhlar and the gewog agriculture extension agent, but it is left to the land users to monitor their own fields.

Fluxograma

The flowchart was created based on the information provided by the community members



Autor: Ongpo Lepcha

Tomada de decisão sobre a seleção da Tecnologia GST

As decisões foram tomadas por

- ☐ Somente usuários da terra (iniciativa própria)
- ☐ Principalmente usuários da terra, apoiados por especialistas em GST
- ☐ todos os atores relevantes, como parte de uma abordagem participativa
- ☒ Principalmente especialistas em GST, após consulta com usuários da terra
- ☐ Somente especialistas em GST
- ☐ Políticos/líderes

As decisões foram tomadas com base em

- ☒ Avaliação de conhecimento bem documentado de GST (tomada de decisão baseada em evidências)
- ☐ Resultados de pesquisa
- ☐ Experiência pessoal e opiniões (não documentado)
- ☒ Consultation with the community members

SUPORTE TÉCNICO, REFORÇO DAS CAPACIDADES E GESTÃO DO CONHECIMENTO

As seguintes atividades ou serviços têm sido parte da abordagem

- ☒ Reforço das capacidades/ formação
- ☒ Serviço de consultoria
- ☒ Fortalecimento da instituição (desenvolvimento organizacional)
- ☒ Monitoramento e avaliação
- ☒ Pesquisa

Reforço das capacidades/formação

Foi fornecido treinamento às seguintes partes interessadas

- ☒ Usuários de terra
- ☐ Equipe de campo/consultores

Tipo de formação

- ☐ Em exercício
- ☒ Agricultor para agricultor
- ☒ Áreas de demonstração
- ☒ Reuniões públicas
- ☐ Cursos

Assuntos abordados

The topics covered included climate-smart agriculture, sustainable land management, and good agricultural practices.

Serviço de consultoria

Foi prestado um serviço de consultoria

- ☒ nas áreas dos usuários da terra
- ☐ Em centros permanentes

ARDC Wengkar and the agricultural extension agent provided all the technical advice and assistance required by the community members.

Fortalecimento institucional

As instituições foram fortalecidas / estabelecidas

- ☐ Não
- ☐ Sim, pouco
- ☒ Sim, moderadamente
- ☐ Sim, significativamente

no seguinte nível

- ☒ Local
- ☐ Regional
- ☐ Nacional

Descreva instituição, papéis e responsabilidades, membros, etc.

The local government was involved in the project from start till end, which enhanced their understanding and capacity to initiate and replicate similar projects in other villages.

Tipo de apoio

- ☐ Financeiro
- ☒ Reforço das capacidades/ formação
- ☐ Equipamento
- ☒ Technical assistance

Mais detalhes

Local government officials were engaged in the capacity building programs implemented for the community and also provided technical assistance as and when required.

Monitoramento e avaliação

ARDC Wengkar and the agriculture extension agent sporadically conducted monitoring and evaluation. However, the local land users are given the full responsibility to monitor their own fields and seek assistance when required.

Pesquisa

As pesquisas trataram dos seguintes tópicos

- ☐ Sociologia
- ☐ Economia/Marketing
- ☐ Ecologia
- ☐ Tecnologia
- ☒ Vulnerability Assessment

ARDC Wengkar conducted a resource and livelihoods analysis through vulnerability assessment before designing and implementing the project in the community.

FINANCIAMENTO E APOIO MATERIAL EXTERNO

Orçamento anual em USD para o componente GST

- ☐ < 2.000
- ☐ 2.000-10.000
- ☐ 10.000-100.000
- ☐ 100.000-1.000.000
- ☐ > 1.000.000

Precise annual budget: 55920.82

The funding was through Commercial Agriculture and Resilient Livelihoods Enhancement Programme (CARLEP) funded by International Fund for Agricultural Development (IFAD).

Os seguintes serviços ou incentivos foram fornecidos aos usuários de terras

- ☒ Apoio financeiro/material concedido aos usuários da terra
- ☒ Subsídios para insumos específicos
- ☐ Crédito
- ☐ Outros incentivos ou instrumentos

Apoio financeiro/material concedido aos usuários da terra

Material inputs such as seeds and seedlings, organic fertilizers, sprinkler pipes, and green shade net were provided through the project.

Equipamento: Maquinário
Sprinkler pipes and green shade nets

Parcialmente financiado
Totalmente financiado



Agrícola: Sementes
Seeds and saplings



Agrícola: Sementes: Fertilizantes
Organic fertilizers



A mão-de-obra dos usuários da terra foi

- ☒ Voluntário
- ☐ Comida por trabalho
- ☐ Pago em dinheiro
- ☐ Recompensado com outras formas de apoio material

ANÁLISE DE IMPACTOS E DECLARAÇÕES FINAIS

Impactos da abordagem

A abordagem concedeu autonomia aos usuários locais de terra, melhorou a participação das partes interessadas?
The project built capacity of the land users and are able to implement and monitor project activities in their own fields.

Não
Sim, pouco
Sim, moderadamente
Sim, significativamente

☐ ☐ ☒ ☐

A abordagem auxiliou os usuários da terra a implementar e manter as tecnologias de GST?
Conducting training and workshops were part of the approach and therefore this made implementing and maintaining the sustainability of the project possible.

☐ ☐ ☒ ☐

A abordagem aprimorou o conhecimento e as capacidades dos usuários da terra para implementar a GST?
The training and workshop helped provide knowledge and skills regarding sustainable land management and climate smart agriculture practices.

☐ ☐ ☒ ☐

A abordagem aprimorou o conhecimento e as capacidades de outras partes interessadas?
The project enabled local government to enhance their knowledge and capacity through direct engagement in the training program and in the implementation of the project activities in the field.

☐ ☐ ☒ ☐

A abordagem concedeu autonomia aos grupos social e economicamente desfavorecidos?
The project benefited all the community members equally disregarding of their background.

☐ ☒ ☐ ☐

A abordagem resultou em segurança alimentar aprimorada/nutrição melhorada?
The climate-smart agriculture practices have improved the agricultural production through crop diversification, electric fencing and irrigation water improvement.

☐ ☐ ☒ ☐

A abordagem melhorou o acesso aos mercados?
ARDC Wengkhari and the local government have facilitated the market by linking the community with Bhutan Agro-industry for processing.

☐ ☐ ☒ ☐

A abordagem aprimorou a capacidade dos usuários da terra de adaptar-se a mudanças climáticas/extremos e atenuar os desastres relacionados com o clima?
Land users were trained on climate-smart agriculture and most importantly the land users have implemented climate smart agriculture practices in their fields which will definitely help build their capacity to adapt to the climate change.

☐ ☐ ☒ ☐

Principal motivação dos usuários da terra para implementar a GST

- ☒ Produção aumentada
- ☒ Lucro (lucratividade) aumentado, melhora da relação custo-benefício
- ☐ Degradação do solo reduzida
- ☐ Riscos de desastre reduzido
- ☐ Carga de trabalho reduzida
- ☐ Pagamentos/subsídios
- ☐ normas e regulamentos (multas)/aplicação
- ☐ Prestígio, pressão social/coesão social
- ☐ Afiliação a movimento/projeto/grupo/rede
- ☐ Consciência ambiental
- ☐ Costumes e crenças, moral
- ☒ melhoria dos conhecimentos e aptidões de GST
- ☐ Melhoria estética
- ☐ Atenuação de conflitos
- ☒ Adapt and mitigate climate change

Atividades de sustentabilidade de abordagem

Os usuários da terra podem sustentar o que foi implementado através da Abordagem (sem apoio externo)?

- ☐ Não
- ☒ Sim
- ☐ Incerto

The land users have built their capacity, improved their production and cash income which should enable them to sustain the project activities.

CONCLUSÕES E EXPERIÊNCIAS ADQUIRIDAS

Pontos fortes: visão do usuário de terra

- Capacity building and technical assistance on CSA and SLM were provided.
- Gained knowledge and skills on CSA practices
- Were able to increase crop production through CSA interventions
- Were provided with an assured market for their produce

Pontos fortes: a visão do/a compilador/a ou de outra pessoa capacitada

- Built human and natural capital through capacity building and implementation of CSA practices.
- Enhanced community resilience to climate change impacts

Pontos fracos/desvantagens/riscos: visão do usuário de terracommo superar

- The approach didn't address the pest problem, specifically the vertebrate pest adequately. Explore additional funding to support electric fencing and if possible chain link fencing.
- Farmers' hesitance to adopt technology. Create adequate awareness prior to actual design an implementation of the project.

Pontos fracos/desvantagens/riscos: a visão do/a compilador/a ou de outra pessoa capacitadacommo superar

REFERÊNCIAS

Compilador/a
ONGPO LEPCHA

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Pessoas capacitadas

Karma Yangki - usuário de terra
Sanga Lhaden - usuário de terra
Lhendup - usuário de terra

Descrição completa no banco de dados do WOCAT

https://qcat.wocat.net/pt/wocat/approaches/view/approaches_6852/

Dados GST vinculados

Technologies: Low-Cost Plastic-Lined Water Harvesting Pond https://qcat.wocat.net/pt/wocat/technologies/view/technologies_6821/
Technologies: Low-Cost Plastic-Lined Water Harvesting Pond https://qcat.wocat.net/pt/wocat/technologies/view/technologies_6821/

A documentação foi facilitada por

Instituição

- National Soil Services Centre, Department of Agriculture, Ministry of Agriculture & Livestock (NSSC) - Butão

Projeto

- 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)

Referências-chave

- Saunogo, D., Sail, M., & Camara, B. A. (2020). The climate-smart village approach: putting communities at the heart of restoration. Tropenbos International, Wageningen.: <https://www.tropenbos.org/file.php/2385/etfrn-news-60-sanogo-the-climate-smart-village-approach.pdf>
- Aggarwal, P. K., Jarvis, A., Campbell, B. M., & Zougmore, R. (2018). The climate-smart village approach: Framework of an integrative strategy for scaling up adaptation options in agriculture. Ecology and Society, 23(1).: https://www.researchgate.net/publication/322765373_The_climate-smart_village_approach_Framework_of_an_integrative_strategy_for_scaling_up_adaptation_options_in_agriculture

Links para informação relevante que está disponível online

- The climate smart villages approach: <https://www.grida.no/resources/4928>
- THE CLIMATE-SMART VILLAGE APPROACH: FRAMEWORK OF AN INTEGRATIVE STRATEGY FOR SCALING UP ADAPTATION OPTIONS IN AGRICULTURE: <https://ccaafs.cgiar.org/resources/publications/climate-smart-village-approach-framework-integrative-strategy-scaling>

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