Cases of practices on peatlands

Instructions

This template is aimed at guiding the submission of cases of practices on peatlands. The resulting practice briefs should allow practitioners and policymakers to identify, develop and better understand wet livelihood options in different peatland landscapes and contexts. The final products are not intended as a scientific reference, but they will undergo a technical scanning and peer review. Contributors agree to the final product, which will be shared through the FAO web site.

Please note that **many fields are optional**. Even though limited information might be available on your case, summarizing the experiences may work as inspiring examples and highlight the need for more research in the field. When possible, please use references.

Before completing the entire form, including the first page of the template, please submit only the first page of the template to [peatlands@fao.org](mailto:peatlands@fao.org).

You may want to refer to examples of our previous case studies: <https://www.fao.org/national-forest-monitoring/areas-of-work/peatlands/peatlands/en/>

**TEMPLATE TO DOCUMENT CASES**

Title of practice/project/initiative

[Responsible organization of the document: author(s), year]

|  |  |  |
| --- | --- | --- |
| \* Required fields; Insert the text and information replacing the space marked between “[\_]” | | |
| [Add a photo of the peatland and the practice, if possible, including local stakeholders]  **\*Photo: [Insert a caption of the technical picture of the site and/or practice], [year]** | | **Productive sector:**  [agriculture, livestock, fisheries, energy, construction, services, etc.]  **Period of implementation\*:**  [ e.g., 2017–2020]  **Approx. budget for the activities**: [] USD  **Climate**\*: [Tropical, temperate, boreal, continental, others]  **Altitude: [] m.a.s.l.** |
| Location \* | [Country, region (province), municipality]  Latitude: [coordinates] and Longitude: [coordinates] | |

**Summary [max. 200 words] \***

Type of practice: [e.g., food production, fibre, wood, biomass, conservation, restoration, ecotourism]

[Short description of the situation: issue that the activities aimed at solving and the practice description]

|  |  |
| --- | --- |
| Webpage | [www. about the activity, project, or others] |

Description

|  |  |
| --- | --- |
| * 1. Origin of intervention \*   *Initiative of the landowner or user, including private sector; indigenous or traditional practices; experimental or research project; government incentive; civil society project; other (please specify).* |  |
| * 1. Main objectives of the practice \*   *Identify 2 main objectives for implementing the practice e.g., reduction of GHG emissions, water quality improvement, income generation, improvement of livelihoods, fire risk reduction, protection of native species, other (please specify).* |  |
| * 1. Area of the site (ha)\*   *Enter the size of the area where the practices are being implemented in hectares (100 ha =1 km2).* | [ ] ha |
| * 1. Level of technical knowledge needed for implementation \*   *Professional-, semi-professional or vocational training requirements to achieve an adequate and efficient implementation of the practice.* | Low, requires basic training  Medium, requires technical or vocational education and training  High, requires specialized training |
| * 1. Types of actions used in the area during the implementation of the practice and other activities \*   *Select the type of intervention. More than one option is possible.* | Rewetting  Drainage  Cultivation of crops  Grazing  Forestry (includes non-timber forest products)  Aquaculture  Fishery  Sustainable livelihood development  Fire risk reduction  Other (please specify): |
| * 1. Land cover and land use \*   *e.g., forestry, cropland (annual or perennial, please specify), agroforestry systems (specify), grassland, managed secondary forest, land for peat extraction, plantation (please specify the type e.g., oil palm), shrubland, aquaculture, fishery, non-timber forest products (NTFPs) collection, settlement, other (please specify).*  *If several, indicate the percentage of the area (specified in 1.3) of each land cover/use in brackets* | At the start date of the implementation:  [] |
| After the implementation:  [] |
| * 1. Drying:   a) If applies, current active drainage system (m) *The data can describe the drainage system present in the area of the project/practice. If it is available, attach a schematic representation of the previous or current drainage system in the additional information section.* | At the start date of the implementation:  [ ] meters |
| After the implementation:  [ ] meters |
| b) Other factors causing the wetland to dry | [e.g., vegetation removal; overgrazing; or others] |
| * 1. If applies, subsidence | At the start date of the implementation:  [ ] cm |
| After the implementation:  [ ] cm |

Implementation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2.1 | Activities  *List the main activities (in order of execution) during the practice implementation. Can include activities along the value chain.* | Materials and inputs\*  *e.g., tractor, construction materials for blocking drainage channels, seedlings, fertilizers, etc.* | Duration  *Enter the*  *duration of*  *each activity*  *(months, years).* | Cost  *Evaluate the*  *cost in USD (specify the units – e.g., USD/unit, USD/hectare, total USD)* | Notes[[1]](#footnote-1) |
| 1 |  |  |  | [ ] USD |  |
| 2 |  |  |  | [ ] USD |  |
| 3 |  |  |  | [ ] USD |  |
| 4 |  |  |  | [ ] USD |  |
| … |  |  |  |  |  |

Environmental characteristics of the site

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 3.1 Average annual rainfall (mm)\*  *Insert the average annual rainfall in mm (if available, please use the average data for the last 10 years).* | | [ ] mm | | |
| 3.2 Slope  *Insert the slope of the site in percent.* | | [ ] % | | |
| 3.3 Peat depth  *Indicate the average peat depth during the implementation of the project/practice. You can mark multiple depths if applies (and refer to its respective part of the peatland).* | | ≤ 30 cm  30–50 cm  50–100 cm  100–300 cm  >300 cm | | |
| 3.4 Peatland type  *Select the type of peatland based on the water source.* | | ‘Fen’ - Minerotrophic | | *A peatland that receives water and nutrients both from rainwater and from groundwater.* |
| ‘Bog’ - Ombrotrophic | | *A peatland that receives water and nutrients from rainwater only.* |
| Undefined | |  |
| 3.5 Hydrological network *List the hydrologic systems that are connected to the peatland* | | [river / lake / sea or please indicate if the peatland is not connected to any aquatic system] | | |
| Estimation of groundwater level:  [ ] cm (during dry season(s) and [ ] cm (during wet season(s) | | |
| 3.6 Main vegetation species *Mention the dominant plant species – specify if they are native or exotic.* | | At the start date of the implementation:  Species:  [native and/or exotic] | | |
| After the implementation:  Species:  [native and/or exotic] | | |
| 3.7 Water quality  *If available, please indicate the values of pH, turbidity and dissolved organic carbon (DOC) content in the drainage canals or in the bodies of water present in the project area.* | **Water pH** | | At the start date of the implementation:  pH [ ] | |
| After the implementation:  pH [ ] | |
| **Water turbidity (NTU)[[2]](#footnote-2)** | | At the start date of the implementation:  [ ] NTU | |
| After the implementation:  [ ] NTU | |
| **Dissolved organic carbon (DOC)[[3]](#footnote-3) (gC m-2 year-1)** | | At the start date of the implementation:  [ ] gC m-2 year-1 | |
| After the implementation:  [ ] gC m-2 year-1 | |

Social, economic and political factors

|  |  |
| --- | --- |
| 4.1 Relevant stakeholders and networks (number, list)  *Identify stakeholders: e.g., farmers, investors, seasonal pastoralists, fishers, communities, national/regional/local government, etc.* | Estimated total number of stakeholders on the influence area:  [ ] people |
| List of the type of stakeholders:  [ ] |
| Of which, participating directly in the project’s activities:  [ ] people |
| Percentage of women and girls among the participants:  [ ]% |
| Organization of key stakeholders:  [organizations, associations, cooperative unions, enterprises] |
| 4.2 Land tenure situation *Enter the land tenure type:* | [Private / state/government / communal / cooperative / tribal / customary, etc.] |
| Changes in the land tenure since the start of the project:  [yes / no / maybe] |
| 4.3 Conflicts *Describe, if they exist, types of conflicts* | List the conflicts:  [e.g., over rights to use, between different groups (e.g., local people and the private sector)]  Assess the level of risk of the conflict:  [high, medium, low] |
| 4.4 Conflict resolution mechanisms *Describe the conflict resolution mechanisms used or planned, if any exist.* |  |
| 4.5 Key legal and policy frameworks relevant to the practice and activities  *Provide a list of key laws, policies and governing institutions (local, regional, national or customary) that directly influence the current practice. Please indicate whether the policies support or hinder the implementation of the project/practice.* | 1. [supports or hinders the implementation] 2. [supports or hinders the implementation] 3. [supports or hinders the implementation] |
| 4.6 Products derived from the peatland landscape  *List the main products* | [e.g., biomass for biofuel, timber, fuelwood, fodder, fish, berries, honey, mushrooms, other foods, resin, fibre, medicinal plants, cosmetic plants, aquaculture products, handicrafts, other (please specify).] |
| 4.7 Market orientation: potential activities  *Enter the main market orientation e.g., national, regional trading market, international market, not applicable* | [e.g., national, regional, local or international market] |
| 4.8 Market access  *Describe the ability to sell the products derived from the peatland landscape in the targeted market.* | Low  Medium  High |
| Distance to market (km)  *Specify the distance to access the closest market where the products are commercialized.* | [ ] km |
| Means to access the market  *Explain the means in which products are commercialized* | [e.g., directly or via intermediaries, etc] |

Social and economic impacts

|  |  |  |  |
| --- | --- | --- | --- |
| *Rate the social impact of the current practice relative to the change since the start of the implementation with the following criteria:*  *1 = highly negative / 2 = moderately negative / 3 = slightly negative / 4 = neutral / 5 = slightly positive / 6 = moderately positive / 7 = highly positive / N/A: Topic not applicable or not-addressed* | | | |
| Impact  *Change caused by an activity during the implementation of the activities.* | | **Rate: 1–7** | **Remarks**  *It can include a description and/or a reference.* |
| Social benefits | |  |  |
| Livelihoods | |  |  |
| Employment | |  |  |
| Income | |  |  |
| Human rights | |  |  |
| Effective participation of relevant stakeholders | |  |  |
| Gender equality | |  |  |
| Indigenous peoples’ rights recognition and safeguards | |  |  |
| Involvement of the youth | |  |  |
| Prevention of, or eradication of child-labour | |  |  |
| For women and men, equal access to: | Decision making and related fora |  |  |
| Financial resources |  |  |
| Productive resources and employment |  |  |
| Knowledge and technology |  |  |
| Services and markets |  |  |

Impacts on ecosystem services[[4]](#footnote-4)

|  |  |  |  |
| --- | --- | --- | --- |
| *Rate the impact of the current practice relative to the change since the start of the implementation with the following criteria:*  *1 = highly negative / 2 = moderately negative / 3 = slightly negative / 4 = neutral / 5 = slightly positive / 6 = moderately positive / 7 = highly positive / N/A: Topic not applicable or not-addressed* | | | |
| Impact  *Change caused by an activity during the implementation of the activities.* | | **Rate: 1–7** | **Remarks**  *It can include a reference and/or explain if the impact is direct or indirect.* |
| 6.1 Provisioning services | **Agricultural/forest production** |  |  |
| **Food security and nutrition** |  |  |
| **Non-timber forest products (NTFPs) yield** |  |  |
| **Freshwater** |  |  |
| **Biodiversity conservation** |  |  |
| 6.2 Regulating services | **Subsidence** |  |  |
| **Erosion prevention** |  |  |
| **Fire frequency and intensity** |  |  |
| **Flooding frequency and intensity** |  |  |
| **Frequency and intensity of other types of extreme events (e.g., droughts, landslides)** |  | [specify here the type of event] |
| **Water quality** |  |  |
| **Local climate (local cooling impact)** |  |  |
| **Resilience and capacity to adapt to climate change** |  |  |
| **Climate change mitigation[[5]](#footnote-5)** |  |  |
| 6.3 Cultural services | **Social relationships** |  |  |
| **Educational values and awareness** |  |  |
| **Recreation and ecotourism** |  |  |
| **Cultural heritage** |  |  |
| **Spiritual experience and sense of place** |  |  |
| 6.4 Supporting services | **Peat formation** |  |  |
| **Waterborne dissolved organic carbon (DOC)** |  |  |
| **Genetic diversity and habitat** |  |  |
| 6.5 Overall environmental impact, including climate impact (estimate) | |  |  |

Environment and climate change mitigation

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *Rate the impact of the current practice relative to the change since the start of the implementation with the following criteria:*  *1 = highly negative / 2 = moderately negative / 3 = slightly negative / 4 = neutral / 5 = slightly positive / 6 = moderately positive / 7 = highly positive / N/A: Topic not applicable or not-addressed* | | | | | | | |
|  | **Estimate** | | | | | | |
| 7.1 Impact | **Rate**  **1-7** | **In t CO2-eq ha-1 año-1** | | | | **Remarks**  *It can include a reference* |
| Before | | After | |
| Total, net GHG emission |  | [+/- ] t CO2-eq ha-1 year-1 | | [+/- ] t CO2-eq ha-1 year-1 | |  |
| CH4 emission |  | [+/- ] t CO2-eq ha-1 year-1 | | [+/- ] t CO2-eq ha-1 year-1 | |  |
| CO2 emission |  | [+/- ] t CO2-eq ha-1 year-1 | | [+/- ] t CO2-eq ha-1 year-1 | |  |
| N2O emission |  | [+/- ] t CO2-eq ha-1 year-1 | | [+/- ] t CO2-eq ha-1 year-1 | |  |
| Carbon sequestration |  | [+/- ] t CO2-eq ha-1 year-1 | | [+/- ] t CO2-eq ha-1 year-1 | |  |
| Carbon storage  aboveground |  | [decreased/maintained] | | [decreased/maintained] | |  |
| 7.2 Do the activities include actions that consider the following? | | | | | | | |
|  | | | **Yes** | **No** | **N/A** | **Remarks** | |
| Monitoring of the impacts | | |  |  |  |  | |
| Reporting on the impacts | | |  |  |  |  | |
| Actions are consistent with the conservation of natural vegetation and biological diversity and enhance environmental benefits | | |  |  |  |  | |
| Actions taken to address the risks of reversals to ensure sustainability of the practice over the long term. | | |  |  |  |  | |
| Actions taken to reduce displacement of emissions (leakage) | | |  |  |  |  | |

Additional information

[Preference: add a map with the geographic location of implementation, graphs and figures which illustrate the key details of the given practice, as well as any links and contact details that can be displayed online. You may also specify if the activities have an innovative component, opportunities for improvement, etc. Max. 1 page]

Figure 2 – Title of figure

Source and/or credits: Source of the figure here, year

REFERENCES

**(EXAMPLES)**

**Abram, N.J., Gagan, M.K., Cole, J.E., Hantoro, W.S. & Mudelsee, M.** 2008. Recent intensification of tropical climate variability in the Indian Ocean. Nature Geoscience, 1(12): 849–853. <https://doi.org/10.1038/ngeo357>

**Adinugroho, W.C., Nyoman, I., Suryadiputra, N., Saharjo, B.H. & Siboro, L.** 2005. Manual for the control of fire in peatlands and peatland forest. Climate Change, Forests and Peatlands in Indonesia Project. Bogor, Indonesia, Wetlands International–Indonesia Programme and Wildlife Habitat Canada. 183 pp. <https://indonesia.wetlands.org/publications/manual-for-the-control-of-fire-in-peatlands-and-peatland-forest/>

**Agus, F., Hairiah, K. & Mulyani, A.** 2011. Measuring carbon stock in peat soils: practical guidelines. Bogor, Indonesia, World Agroforestry Centre (ICRAF). 60 pp. http://old.worldagroforestry.org/downloads/Publications/PDFS/MN17335.PDF

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{LOGOS TO BE ADDED}

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1. More information about the activities can also be indicated in sections 3, 4 and 8. [↑](#footnote-ref-1)
2. See standardized methods of measurement of water turbidity developed by: United States Environmental Protection Agency <https://www.epa.gov/sites/production/files/2015-08/documents/method_180-1_1993.pdf> ); International Organization for Standardization <https://www.iso.org/obp/ui/#iso:std:iso:7027:-1:ed-1:v1:en> and <https://www.iso.org/obp/ui/#iso:std:iso:7027:-2:ed-1:v1:en> [↑](#footnote-ref-2)
3. Measurement and importance of dissolved organic carbon: <https://www.nrs.fs.fed.us/pubs/jrnl/2008/nrs_2008_kolka_001.pdf> [↑](#footnote-ref-3)
4. <http://www.fao.org/ecosystem-services-biodiversity/en/> [↑](#footnote-ref-4)
5. In the case of peatlands, this refers in particular to stopping and avoiding greenhouse gas emissions, maintaining carbon stocks and, slow carbon sequestration. For further information: [www.fao.org/in-action/micca](http://www.fao.org/in-action/micca) and <http://www.fao.org/national-forest-monitoring/areas-of-work/peatlands/en/> [↑](#footnote-ref-5)