

SD-TOOL01

Tool

Voluntary tool for describing sustainable development co-benefits of CDM project activities or programmes of activities (PoA)

Version 01.1



1. Introduction

1. The CDM sustainable development co-benefits description tool (SD tool) is made available to CDM project participants and coordinating / managing entities to assist them to describe sustainable development co-benefits of a CDM project activity or programme of activities (PoA).
2. The use of the SD tool is entirely voluntary. It has been developed in response to paragraph 5 of decision 8/CMP.7, in which the CMP requested the CDM Executive Board to "develop appropriate voluntary measures to highlight the co-benefits brought about by CDM project activities and PoAs, while maintaining the prerogative of the Parties to define their sustainable development criteria".
3. The SD tool is maintained by the UNFCCC secretariat as mandated by the CDM Executive Board (EB 70, paragraph 82). The SD tool can be used at any time in the life of a CDM activity, including to update the description should co-benefits change.
4. The SD tool can be used for a single activity only. The SD tool produces a sustainable development co-benefits (SDC) description report. This report and any previous SDC description reports will be made available on the CDM website for the activity chosen.
5. Any feedback or questions can be emailed to *sdtool@unfccc.int*.

INSTRUCTION	
<p>Please complete the sections one to three below. All the questions in bold font are compulsory (unless otherwise indicated in the document).</p> <p>Section 1: select project activity / PoA Section 2: sustainable development co-benefits Environment - Air Environment - Land Environment - Water Environment - Natural resources Social - Jobs Social – Health & safety Social - Education Social - Welfare Economic - Growth Economic - Energy Economic – Technology transfer Economic – Balance of payments Further information Section 3: third party assessment and contact information Third party assessment Contact information</p> <p>Please send the completed document to the UNFCCC secretariat requesting a corresponding sustainable development co-benefits description report to be published on the CDM website via either:</p> <p>a) EMAIL TO SDTOOL@UNFCCC.INT - with subject "request to publish" and document attached with file name "SD_Tool01_<Your CDM Reference number>.doc" (e.g. SD_Tool01_0001.doc); <u>or</u></p> <p>b) MAIL TO: CDM – SD Tool UNFCCC secretariat P.O. Box 260124 D-53153 Bonn Germany</p>	
SECTION 1: SELECT PROJECT ACTIVITY / PoA	
Full Title	Dagachhu Hydropower Project, Bhutan
Type of activity(ies)	Project activity
Project activity/PoA reference no. <i>(if available)</i>	2746
<p><i>If a Project activity/PoA reference number was provided above, please go to Section 2 below.</i></p> <p><i>If Project activity/PoA reference number is not yet issued, please answer questions below.</i></p>	
Project cycle stage (e.g. prior consideration, validation)	
Sectoral scope(s)	
Host Party(ies)	
Geographical location– latitude	

Geographical location - longitude	
SECTION 2: SUSTAINABLE DEVELOPMENT CO-BENEFITS	
Environment - Air	
Does the activity improve air quality in the area?	Yes (and I wish to specify)
<i>The activity improves air quality by reducing air pollutants such as SOx (sulphur oxides), NOx (nitrous oxides), Suspended Particulate Matter (SPM) emissions, Non Methane Volatile Organic Compounds (NMVOCs), fly ash, noise, odour or dust. Reductions in greenhouse gasses are not included, as this defines all CDM projects. If the activity avoids indoor smoke, this can be declared under "Social - health and safety" section.</i>	
<i>If answered 'Yes' to the question above, continue with Specific indicators below. If answered 'No' or 'N/A', go to the Environment - Land section.</i>	
<u>Specific indicators</u> How and to what extent does the activity improve air quality in the area?	
Reducing level/frequency/time of SOx (sulphur oxides) emissions? <i>Please specify</i>	Partly
The project activity is estimated to generate 126MW of clean energy without generation of any Sulphur Oxide.	
Reducing level/frequency/time of NOx (nitrous oxides) emissions? <i>Please specify</i>	Partly
The project activity is estimated to generate 126MW of clean energy without generation of any Nitrous Oxides	
Reducing level/frequency/time of fly ash emissions? <i>Please specify</i>	Partly
The project activity is estimated to generate 126MW of clean energy without generation of any Flay Ash Emissions.	
Reducing level/frequency/time of SPM (Suspended Particulate Matter) emissions? <i>Please specify</i>	Partly
The project activity is estimated to generate 126MW of clean energy without generation of any suspended Particulate Matter.	
Reducing level/frequency/time of NMVOCs (Non Methane Volatile Organic Compounds)? <i>Please specify</i>	N/A
Reducing level/frequency/time of noise? <i>Please specify</i>	N/A

Reducing level/frequency/time of odours? <i>Please specify</i>	N/A
Reducing level/frequency/time of dust? <i>Please specify</i>	N/A
Other air quality improvements? <i>Please specify</i>	Partly
The project activity generates 126 MW of Clean Energy It displaces the use of fossil fuels for energy generation in India and Bhutan, thereby reducing air pollutants and significantly improving air quality in the region	
Environment - Land	
Does the activity improve the soil quality and/or avoid soil pollution, waste disposal?	Yes (and I wish to specify)
<i>The activity can improve the soil quality through the production and use of e.g. compost, manure nutrient and other fertilizers and/or avoid polluting the soil, waste disposal.</i>	
<i>If answered 'Yes' to the question above, continue with the Specific indicators below. If answered 'No' or 'N/A', go to the Environment - Water section.</i>	
<u>Specific indicators</u>	
How and to what extent does the activity improve the soil quality and/or avoid soil pollution, waste disposal?	
Prevention of pollution from end-of-life products/equipment (solid waste)? <i>Please specify</i>	Partly
to prevent the pollution from endof-life of product/equipment (solid waste), the equipment/products is disposed off for recycling.	
Production/use of compost? <i>Please specify</i>	N/A
Production/use of manure, mineral fertilizer or other soil nutrients? <i>Please specify</i>	N/A
Use of irrigation? <i>Please specify</i>	N/A
Use of measures to prevent soil erosion? <i>Please specify</i>	Partly
The project activity provides financial support for afforestation and also carryout of plantation of sapling around the project area annually.	

Practice minimum tillage? <i>Please specify</i>	N/A
Other means to improve land quality? <i>Please specify</i>	Partly
Project activity supports local community in improving the environment by distributing sapling and providing financial support for revival of environment which help prevent soil erosion and landslides protecting the land.	
Environment - Water	
Does the activity improve water in the area?	N/A (the question is not relevant)
<i>The activity improves the quality of water and/or access to water through e.g. wastewater management, water savings, safe and reliable water distribution, purification/sterilization and cleaning of water etc.</i>	
<i>If answered 'Yes' to the question above, continue with Specific indicators below. If answered 'No' or 'N/A', go to the Environment - Natural resources section.</i>	
<u>Specific indicators</u> How and to what extent does the activity improve water in the area?	
Improved management and or control of waste water? <i>Please specify</i>	Partly
The project activity do not produce any plloutant/waste water. The project activity are management within the project.	
Saving and/or conservation of water? <i>Please specify</i>	Partly
The Project activity provides financial support for revival of lakes within the district which are primary source of water	
Reliable and accessible water supply though improved or new distribution? <i>Please specify</i>	Partly
The Project activity through dedicated water pipeline have distributed water supply to 24 household within the community.	
Safe potable water through purification or a cleaner supply? <i>Please specify</i>	Partly
The project activity have provided water dispenser to schools.	
Improved ecological state of water bodies? <i>Please specify</i>	Partly
The Project activity have supported and continues to support revival of Lakes which are primary sources of water in the community. Further financial support have been provided to manage watershed area.	

Other means to improve water? <i>Please specify</i>	Partly
provided financial support to Department of Forest for improvement of Watershed	
Environment - Natural resources	
Does the activity protect or enhance depletable natural resources? <i>The activity protects or enhances depletable natural resources and landscapes such as minerals, plants, animals, forests and their diversity.</i>	Yes (and I wish to specify)
<i>If answered 'Yes' to the question above, continue with Specific indicators below. If answered 'No' or 'N/A', go to the Social - Jobs section.</i>	
<u>Specific indicators</u> How and to what extent does the activity protect or enhance depletable natural resources??	
Mineral resources <i>Please specify</i>	Partly
The Project activity supports national goal of rural electrification thereby minimising dependency on fossil fuel.	
Plant life (e.g. plant habitats) <i>Please specify</i>	Partly
The Project activity supports national goal of rural electrification thereby minimising dependency on fossil fuel.	
Species diversity (e.g. animals, insects, birds) <i>Please specify</i>	Partly
The Project activity in consultation with Department of Forest monitors and illegal poaching.	
Forests <i>Please specify</i>	Partly
To compensate the tree fell during construction and to revive depleting forest, the project activity carryout plantation of sapling on annual basis. Till date, project activity have planted more than 36,000 saplings.	
Other depletable natural resources (enhanced/protected) <i>Please specify</i>	N/A
Social - Jobs	
Does the activity create new jobs? <i>The activity creates new job opportunities including income generation.</i>	Yes (and I wish to specify)
<i>If answered 'Yes' to the question above, continue with Specific indicators below. If answered 'No' or 'N/A', go to the Social – Health & safety section.</i>	

<u>Specific indicators</u>	
How and to what extent does the activity create new employment?	
New long-term jobs (> 1 year) <i>Please specify</i>	Partly
The Project Activity provides employment opportunities to local community	
New short-term jobs (< 1 year) <i>Please specify</i>	Partly
The project activity provides employment to local community	
New sources of income generation <i>Please specify</i>	Partly
With the project activity, the local community has improved source of income from i) sale of local produce ii) employment, iii) hire of land and machineries creating new income streams and entrepreneurial opportunities for the community.	
Other employment opportunities <i>Please specify</i>	Partly
Other employment opportunities includes small contracts and employment on part-time basis	
<i>Please indicate the number of persons employed/to be employed (provide numbers only) or leave blank if not known:</i>	
New long-term jobs (> 1 year)	24
New short-term jobs (< 1 year)	12-15
Social – Health & safety	
Does the activity result in health and safety improvements?	Yes (and I wish to specify)
<i>The activity reduces health risks such as diseases and accidents or it improves health conditions through activities such as construction of a hospital, running a health care centre, preservation of food, reducing health damaging air pollutants and indoor smoke. Avoided accidents such as gas explosions or fires from landfills or mines are included under health and safety benefits.</i>	
<i>If answered 'Yes' to the question above, continue with Specific indicators below. If answered 'No' or 'N/A', go to the Social - Education section.</i>	
<u>Specific indicators</u>	
How and to what extent does the activity result in health and safety improvements?	
Reduction of diseases, disease prevention <i>Please specify</i>	Partly
The activity in consultation with Health official conducts annual health Screening for its employees and local community.	
Reduction of accidents (e.g. fire hazards) <i>Please specify</i>	Partly
The activity have fire fighting equipment which is also extended to local communities in times of need.	

Reduction of crime <i>Please specify</i>	N/A
Preservation of food <i>Please specify</i>	N/A
Reducing health damaging indoor air pollution <i>Please specify</i>	Partly
The activity have installed ventilation fan to regulate the air inside the power House cavern	
Enhancement of health services (hospitals, doctors, medication etc.) <i>Please specify</i>	Partly
The activity conducts first aiders training, awareness of on health, and provide financial support to hospital.	
Improved sanitation and waste management (i.e. facilities that offer the possibility of depositing of waste in a sanitary way) <i>Please specify</i>	Partly
The activity have provided financial support, materials and machineries for construction of dumping yards under tshendangang gewog	
Other health and safety improvements <i>Please specify</i>	Partly
The project activity have provided drinking water to more than 24 house hold in the community, hand washing facilities for Dagapela Middle secondary school, revival of lakes which are primary sources of drinking water in most communities.	
Social - Education	
Does the activity facilitate education, dissemination of information, research or increase awareness?	Yes (and I wish to specify)
<i>The activity facilitates education, dissemination of information, research and increased awareness related to e.g. waste management, renewable energy resources and climate change through construction of a school, running of education programmes, site visits and tours.</i>	
<i>If answered 'Yes' to the question above, continue with Specific indicators below. If answered 'No' or 'N/A', go to the Social - Welfare section.</i>	
<u>Specific indicators</u>	
How and to what extent does the activity facilitate education, dissemination of information, research or increase awareness?	
Job related training (vocational etc.) <i>Please specify</i>	Partly
The Project activity have provides internship/ On JoB Traning to engineers, general graduates.	

Enhanced educational services (schools, teachers, affordability, quality etc.) <i>Please specify</i>	Partly
The project activity provides supports to enhancing the educational services such as electrification of classroom, projectors and computers to improving teaching, academic activities, promotion of sports, sanitary and tooth brush to improve the health of students.	
Project related knowledge dissemination (project related site visits and tours etc.) <i>Please specify</i>	Partly
The schools within Dagana district visit the project annually to learn about the project and to have practical knowledge on the hydro Power project. The project activity encourages and facilitates site visit for student and teachers.	
Other educational benefits <i>Please specify</i>	Partly
The other educational benefits includes i) improvement of infrastructure in school, ii) transportation services for educational tours, iii) waste management iv) promotion of sports, etc.	
Social - Welfare	
Does the activity improve the welfare of people?	Yes (and I wish to specify)
<i>The activity improves local living and working conditions including community or rural advancement, reduced traffic congestion, poverty alleviation and income redistribution e.g. through increased municipal revenues.</i>	
<i>If answered 'Yes' to the question above, continue with Specific indicators below. If answered 'No' or 'N/A', go to the Economic - Growth section.</i>	
<u>Specific indicators</u> How and to what extent does the activity improve the welfare of people?	
Improvement of working conditions <i>Please specify</i>	Highly
the working condition within the project activity is been improved as per ISO standard ISO 45000:2015. The working condition of the local communities also improved indirectly through the income generated from project activity through employment, hire of land, machineries, sale of local produce and through works award	
Community or rural advancement <i>Please specify</i>	Partly
The living standard has improved with the facilities provided by the project activity such as improved access road	
Poverty alleviation (more people above poverty level) <i>Please specify</i>	Partly
The income generated from the project through employment, renting of land and machineries, award of work has improved the living standard of people around the project area.	

Improving wealth distribution and/or generation of income and assets <i>Please specify</i>	Partly
The income generated from the project through employment, renting of land and machineries, award of work has improved the living standard of people around the project area.	
Increased municipal revenues <i>Please specify</i>	N/A
Empowerment of women (e.g. optimize tasks undertaken by women) <i>Please specify</i>	Partly
The project activity considers importance of Women in the organisation.	
Reduced traffic congestion <i>Please specify</i>	Partly
The financial support provided by project activity for improvement of the road infrastructure has help in reducing the traffic congestion.	
Other welfare benefits <i>Please specify</i>	Partly
The Project activity have provided support to the local community in following i) improvement of the access road, revival of lakes which is primary source of streams, drinking water to household, transportation services for students, afforestation etc.	
Economic - Growth	
Does the activity support economic development and/or stability?	Yes (and I wish to specify)
<i>The activity contributes to economic development and stability through initiation of e.g. new industrial activities, investments, establishment and maintenance of infrastructure, enhancing productivity, reduction of costs, setting an example for other industries and creation of business opportunities.</i>	
<i>If answered 'Yes' to the question above, continue with Specific indicators below. If answered 'No' or 'N/A', go to the Economic - Energy section.</i>	
<u>Specific indicators</u> How and to what extent does the activity support economic development and/or stability?	
New economic investment as result of the project <i>Please specify</i>	Partly
Due to the project activity, some business has developed around the project.	
Initiation of new industrial/commercial activities <i>Please specify</i>	Partly
The implementation of the Dagachhu Hydropower Project has contributed to the initiation of new industrial and commercial activities in the project area. The development of access roads and supporting infrastructure has improved connectivity, while the demand generated by the project—such as for spare parts, household goods, and services for employees—has created business opportunities for the local community. This has led to the emergence of small shops, service centers, and other commercial ventures, enhancing local livelihoods and stimulating economic activity in the region.	

Establishment and maintenance of new infrastructure <i>Please specify</i>	Partly
The project led to the construction and regular maintenance of access roads, bridges, staff housing, and utility services, improving connectivity and benefiting both project operations and local communities.	
Enhancement of productivity of existing production <i>Please specify</i>	N/A
Reduction of costs of production or services <i>Please specify</i>	N/A
Creation of new business opportunities <i>Please specify</i>	Partly
With the implementation of the project activity, the opportunities for new business have increase such as supply of materials for the project, repair and maintenance, fuel depot for vehicles, grocery items, etc.	
Other economic benefits <i>Please specify</i>	Partly
The economic Benefit of the Project activity are i) improved road connectivity, ii) improved electrification iii) improved telecommunication facilities iv) transportation services within community v) increase in income of Local community through employment, renting of land and machineries and sale of local produce,	
Economic - Energy	
Does the activity improve energy availability and/or access?	Yes (and I wish to specify)
<i>The activity improves access, availability and quality of electricity and heating/cooling services such as coverage and reliability.</i>	
<i>If answered 'Yes' to the question above, continue with Specific indicators below. If answered 'No' or 'N/A', go to the Economic – Technology transfer section.</i>	
<u>Specific indicators</u> How and to what extent does the activity support economic development and/or stability?	
Improved coverage/availability of supply of energy (e.g. distribution, hours of the day) <i>Please specify</i>	Partly
The energy generated from the project activity is connected to Bhutan and Indian Grid thus improving the reliability and accesssibility of power supply in the region	
Improved access to energy (e.g. points of delivery) <i>Please specify</i>	Partly
With Project activity connected to Grid, the access/avaliability of the energy in the region has improved	

Affordability and/or reliability of energy <i>Please specify</i>	Partly
The energy generated from the project activity have increased the share of renewable energy in the region. As the project activity is connected to Bhutan and Indian Grid the reliability have improved.	
Other improvements to energy <i>Please specify</i>	N/A
Economic – Technology transfer	
Does the activity result in a change in technology?	Yes (and I wish to specify)
<i>The activity facilitates transfer of imported technology or diffusion of new local technology. Development of knowhow on how to adapt new technologies to a country/region and innovation of equipment and processes are included as technology transfer benefits.</i>	
<i>If answered 'Yes' to the question above, continue with Specific indicators below. If answered 'No' or 'N/A', go to the Economic – Balance of payments section.</i>	
<u>Specific indicators</u> How and to what extent does the activity result in a change in technology?	
Introduction, development and diffusion of imported technology? <i>Please specify</i>	Partly
The equipment used in the project activity are all imported from Europe thus introducing/diffusing the European Technology in the region	
Introduction, development and diffusion of new local technology? <i>Please specify</i>	Partly
The Project introduces advanced hydropower and SCADA technologies imported from Europe, enabling modern automation and efficient plant operation. Through collaboration with international suppliers and targeted training, Bhutanese engineers gained practical skills in operation and maintenance. This has enhanced local technical capacity, reduced reliance on foreign expertise, and promoted wider diffusion of modern hydropower practices in Bhutan.	
Adaptation of new viable technologies to local circumstances? <i>Please specify</i>	Partly
The european technology/new technology adopted in the project activity are being adapted in other hydro power plants.	
Activities that build usable know-how for a technology? <i>Please specify</i>	Partly
The employees are trained to operate the new technology. further employees are trained to keep upto date with the changing technology.	

Other technological benefits <i>Please specify</i>	Partly
The new technologies in the Hydro Power plant have following benefit i) improved realibility of plant ii) monitor health of the equipments iii) minimised downtime iv) ease of operation v) transparency in operation	
Economic – Balance of payments	
Does the activity contribute to improving the country's balance of payments?	Yes (and I wish to specify)
<i>The activity contributes to reduction in the use of foreign exchange through a reduction of imported fossil fuels in order to increase national economic independence.</i>	
<i>If answered 'Yes' to the question above, continue with Specific indicators below. If answered 'No' or 'N/A', go to the Further information section.</i>	
<u>Specific indicators</u>	
How and to what extent does the activity contribute to improving the country's balance of payments?	
Reduction of the dependency on foreign sources of energy <i>Please specify</i>	Partly
The Sale of Emission reduction and Sale of Electricity in India has improved the country's foreign currency reserve.	
Other macroeconomic benefits <i>Please specify</i>	Partly
The Marco economic benefits of the project activity are: i) employment opportunities for the local community, II) improved infrastructure like road and bridges iii) boost local business iv) stable and continuous energy supply, V) support other developmental activity in the region, vi) reduced dependency on Fossil fuel thus reducing import of fuel, export of energy increases countires revenue	
Further information	
Do you have any further information that highlights the sustainable development co-benefits of the activity? <i>Please specify</i>	Yes (and I wish to specify)
Asian Development Bank have conducted a survey on co-benefit analysis of project. The report have been published by ADB in 2017 and 2024.	

SECTION 3: THIRD PARTY ASSESSMENT AND CONTACT INFORMATION	
Third party assessment	
Could the statements made below be verified by the third party?	
Has an independent third party (environmental auditor, voluntary standards organization, designated operational entity etc.) verified the statements made in the SD description you are about to submit?	No
<i>If YES, please specify the name or type of verifying organisation or any other relevant information</i>	
No. but the the Co-benefit analysis was carried out by Asian Development Bank in 2019 and 2024. The Project activity was found to be in compliances with WCD requirement. The compliance to WCD report was validated by DNV, India in 2011 and was revalidated by KBS Certification Services in 2022. further the environment impacts are monitored by the National Environment commissioned and regulating authorities in Bhutan regulary monitors the impacts of project.	
Are you willing to have an independent third party verify the statements made in the SD description you are about to submit?	Yes
<i>If YES, please specify further details (if any)</i>	
Contact information	
Title	Mr.
First Name	Namgay
Last Name	Dorji
Organisation	Dagachhu Hydro Power Corporation Limited
Tel number (incl. country code, for instance +492288151000)	+975-17312670
Email address	namgay_pala@hotmail.com
Affiliation to CDM (e.g. project owner/operator, project developer, project investor, project consultant etc.)	Project Owner
Are you the person listed in the latest version of the form Modalities of Communication statement (F-CDM-MOC) for this project?	Yes
<i>If NO/Other please specify:</i>	
ACKNOWLEDGEMENTS	
The content of the SD tool has been guided by the following sources of information (listed in no particular order), inter alia: CDM project documentation (all registered projects up to March 2012), IPCC AR5 WG III, Account Ability (AA1000) Stakeholder Engagement Standard, German International Climate Initiative (ICI), The Gold Standard, The Crown Standard, Forest Stewardship Council (FSC), Roundtable on Sustainable Biofuels (RSB), Climate Community and Biodiversity Alliance (CCBA), EU Compliance report for LoA template, World Commission on Dams (WCD), International Labour Organization (ILO), CDM Watch, World Bank	

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Safeguard Policies, The International Finance Corporation Performance Standards, Hydropower Sustainability Assessment Protocol, Equator Principles, UN Commission on Sustainable Development (CSD), UN Millennium Development Goals (MDGs), UN Global Compact, World Health Organization (WHO), Outcome of the UN Conference on Sustainable Development (Rio+20), public call for inputs (EB68) and peer reviewed literature.

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
01.1	1 April 2014	Editorial revision to improve consistency of language throughout.
01.0	23 November 2012	EB 70, paragraph 82. Initial approval.

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