



ស៊ុយអែត
Sverige



ANNUAL PROJECT PROGRESS REPORT
Reporting Period: **01 January – 31 December 2020**



Project Name: **Building an Enabling Environment for Sustainable Development (BESD)**
Project ID: 00093203
Award ID: 0085640

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS	2
BASIC PROJECT INFORMATION	3
SUMMARY OF KEY RESULTS	4
PROGRESS ON PLANNED ACTIVITIES AND RESULTS FOR THE PERIOD FROM JANUARY – JUNE 2020 AGAINST INDICATORS	9
QUALITY OF RESULTS	18
SOUTH-SOUTH AND TRIANGULAR COOPERATION	19
COMMUNICATIONS, KNOWLEDGE MANAGEMENT AND VISIBILITY	20
Cambodia faces plastic woes	21
PROJECT IMPLEMENTATION CHALLENGES	23
KEY LESSONS LEARNT	23
ANNEX 1: RISK LOG	28
ANNEX 2: PROJECT IMPLEMENTATION ISSUES AND ACTIONS	29

ACRONYMS AND ABBREVIATIONS

ADF	Archaeology & Development Foundation
APA	Archeological Protected Areas
BESD	Building an Enabling Environment for Sustainable Development
CBNRM	Community-Based Natural Resources Management
CPA	Community Protected Areas
DBD	Department of Biodiversity
GDE	General Department of Energy
GDLC	General Directorate of Local Community
GDEP	General Directorate of Environmental Protection
MME	Ministry of Mines and Energy
MoE	Ministry of Environment
NCDD-S	National Committee for Democratic Development Secretariat
NCSD	National Council for Sustainable Development
NIM	National Implementation Modality
NRM	Natural Resources Management
NTFP	Non-Timber Forest Products
PES	Payment for Ecosystem Services
PDoE	Provincial Department of Environment
RUPP	Royal University of Phnom Penh
SEAC	Solar Energy Association of Cambodia
SHS	Solar Home System
UNDP	United Nations Development Programme
UNDP TRAC	Target for Resource Assignment from the Core Fund

BASIC PROJECT INFORMATION

Project ID:	0085640	Reporting Date/Quarter:	01 January – 31 December 2020
Full Title:	Building an Enabling Environment for Sustainable Development (BESD) in Cambodia		
Start Date:	1/1/2019	Completion Date:	30/6/2021
Total Project Budget:	US\$ 3,184,952.32 (with budget extension)	Annual Project Budget:	US\$1,686,776.19 (US\$ 470,880 for tree planting was injected in August 2020)
Implementing Partner(s):	The National Council for Sustainable Development (NCSD)		
Donor/s:	Swedish International Cooperation and Development, Embassy of Sweden in Phnom Penh (Sweden) – US\$2,904,840.06 Co-financed by: <ul style="list-style-type: none"> ● UNDP TRAC - Target for Resource Assignment from the Core Fund – US\$280,000 ● NCSD (in-kind) – US\$160,800 		
Responsible Parties:	<p>Government Agencies:</p> <ul style="list-style-type: none"> ● The National Committee for Democratic Development Secretariat (NCDD-S) ● The General Department of Energy, Ministry of Mines and Energy (MME) ● The General Directorate of Local Community (GDLC), Ministry of Environment (MoE) ● The General Directorate of Environmental Protection (GDEP), MOE <p>NGOs & Academia:</p> <ul style="list-style-type: none"> ● Archaeology & Development Foundation (ADF) ● Energy Lab ● Solar Energy Association of Cambodia (SEAC) ● Royal University of Phnom Penh (RUPP) ● University of Management (newly added in last quarter of 2020) <p>Private Company:</p> <ul style="list-style-type: none"> ● Okra Company for Solar DC microgrid 		
Project Description:	The overall project objective is to strategically position Cambodia's path towards achieving the Sustainable Development Goals related to <i>1) natural resources management (NRM); 2) circular economy; and 3) clean, affordable and sustainable energy</i> . The project designs and tests <i>innovative</i> environmentally sustainable models in the targeted areas through public and private partnerships and further identifies venues for scaling-up workable models. The project will attain the following three outputs: <ul style="list-style-type: none"> ● Output 1: CBNRM institutions strengthened and financial resources mobilised for sustainable NRM ● Output 2: Waste reduced, recycled and reused through application of circular economy models ● Output 3: Improved access to clean, affordable, and sustainable energy for the rural poor 		
Target Areas:	This project targets three provinces: Siem Reap (for PES), Kep (for circular economy), Preah Sihanouk (for PES). However, for circular economy and solar energy challenge funds will cover nationwide to leverage its impact funds in these sectors and promote innovation incubation.		
Target Group:	Civil society organizations, the private sector, academic institutions, local communities, indigenous peoples and women, with particular attention to the rights of socially marginalized groups.		

SUMMARY OF KEY RESULTS

This report covers key project results during the project period between Jan-Dec 2020.

Area 1: Community Based Natural Resources Management (CBNRM) and Payment for Ecosystem Services (PES)

1.1 CBNRM

The Department of Community Livelihoods (DCL) has completed a series of activities follows:

- Strengthening of community institutions and networks
 - From 25-26 Feb 2020, the **Community Network Meeting** was conducted in order to share information and promote the cooperation on NRM with Local authorities and Park Rangers. There were 53 participants including 9 women.
 - From 7-21 March 2020, **5 annual meetings** to share challenges, information and progress were conducted with 5 Community Protected Areas (CPAs) of Kulen National Park (PKNP), Siem Reap, attended by 373 participants, including 178 women.
 - From 22-28 April 2020, a consultative meeting was conducted with 4 CPAs committees in Kulen, to update the Popel community on the amendment of by-law regulations, Commune Dekka (circular), demarcation and monitoring of the amendment by-law, attended by 120 participants including 17 women. As a result, 5 **CPA Prakas** were endorsed by MoE in the last quarter of 2020.
 - The extended CPA areas were proposed to include **4 non-visited waterfalls**. The linking tracks, rest huts and waterfalls were established and managed by a newly created community-based tourism committee, comprising of the CPA committee and ADF representative upon the successes of the existing "Nature trails", established in 2015 by the PDoE and the Popel CPA.
- Resource assessments and boundary demarcation
 - From 18-31 May 2020, assessments of 130 forest inventory plots were conducted in Kulen Mountain's CPAs (Preythom, Along Thom, Prey Thom Popel and Prey Phnom Mos) to understand the availability of timber and non-timber forest products within the CPA, to prepare for the CPA Management Plan. This process engaged 91 participants (31 women) and park rangers. **4 Management Plans** were endorsed by MoE.
 - From 4-13 May 2020, **CPA Management Plan Zoning** exercise was conducted to draft a resource map in four communities including commune councilors, villagers, village chiefs, community members and elderly people, attended by 93 participants (27 women).
 - An expansion of 798 hectares of CPA in Khar Khmum was endorsed by MoE.
 - From 18-24 October 2020, the DCL conducted a **consultative meeting with the CPA management committee** and members to consult on the drafting of CPA management. There were 64 attendee (7 women), from Prey Thom Popel, Prey Thom Anlong Thom, Prey Phnom Mnas and Phnom Kdouch CPA. From 5-8 November 2020, DCL conducted the consultative meeting with stakeholders in order to finalize on the CPA management plans for the 5 CPA in Kulen National Park, incorporating their inputs.
 - To be more inclusive, from 19-22 November 2020, the DCL worked in collaboration with PDoE, Siem Reap province to review the four CPA management plan and made a final version.
- Improving the livelihoods of communities
 - The project increased the number of families connected to the water system from **27 to 37**, including **88 females 3 of which are widows**. An additional support was given to install 13 ring wells, increasing the reservoir storage in the village.

- The project supported alternative **livelihood activities of chicken and pig raising** involving at least 13 families with eight being women and widows. Each pig raiser family was provided 4 bags of cement and 500 bricks to build the slab and the small walls for the pig stalls. Each farmer provided the wooden and the tent sheet for the upper structure of the stall. 1 water tank and 2 meters of pipes were also provided per family. After the structure was properly built and verified by ADF team, the family received 1 pig. For the chicken raising families, each family received 15 chickens, 7 Kg of green shade for the fence, 2 water tanks and 2 feed tanks. Regular follow up and technical support was conducted by ADF/ AGRISUD International team

1.2 PES

The Department of Biodiversity (DBD) has achieved the following results as follows:

- Designing of two PES pilots
 - **Policy briefs and options for financial mechanism** were developed and discussed with the senior management of MoE/NCSO for PES pilots in Phnom Kulen National Park and Kbal Chhay Multiple Use Area (KCMUA). For Phnom Kulen National Park, proposed options include 1) voluntary contribution from large volume water users (Commercial), 2) tax on commercial water usage (Producers and retailers) and 3) integrate a fee in the visit Angkor Wat visitor ticket or put a fee as a value added tax at the airport. For Kbal Chhay, proposed options include 1) voluntary contribution from large volume water users (Commercial) and 2) tax on commercial water usage (Producers and retailers). Policy brief from MoE sent to ANCO company in Sihanoukville
 - Biodiversity and land-use baseline mapping assessments were conducted which identified **29 key endangered species** in Kbal Chhay. The land-use and micro-catchment mapping shows that both Kulen and Kbal Chhay are under server threat from sustaining their water sources to the downstream cities, Siem Reap and Preah Sihanoukville.
- National PES policy
 - A **Study Tour of Journalist Network** on Payment for Ecosystem Services (PES) in Phnom Kulen National Park from 18-20 December 2020 was completed. The Management of MoE and Key focal points in DBD were interviewed regarding the PES schemes within the polit area. After the event, 10 articles have been released on more than 10 media channels.
 - **Four technical guidance documents** for Kulen and Kbal Chhay drafted, such as 1) conceptual design and result framework, 2) PES funding mechanisms, 3) PES Management Plan for Kbal Chhay, 4) PES Roadmap (2021-2030) drafted and inputs have been collected from the Biodiversity TWG on 27 Nov 20.

1.3 Tree Planting (New)

- Tree planting as cash for work sought to address the urgent needs of COVID-19-affected rural communities and the need to restore the important ecosystems. 97,800 trees of 9 local species were planted in an area of 131.93 Ha. This includes 54.43 Ha in Phnom Kulen and Chankran Roy, 22.5 Ha at the border of Orchid Center, and 55 Ha at Stueng Thmei CPA.
- A nursery of flooded tree for reforestation program in the conservation area of the Tonle Sap Lake has been established. Over 50,000 flooded tree seedlings of 5 local species produced and maintained. Moreover, these seedlings will be planted in early 2021 on 50 ha of flooded areas in 3 districts of the province. The 5 local species are as following:
- At least, US\$148,275 was directly paid to 2,114 tree planting workers which is equal to 1,558 families. 47% female workers and 72 women-headed households have benefited from this COVID-19 response.

1.4 Programming and resource mobilization

- A joint proposal with UN Habitat on fresh water and wastewater management in southern

Area 2: Circular Economy

2.1 Piloting new business approaches for municipal waste management in Kep

- Enabling regulatory and policy work for CE in Kep
 - NCDD-5 has **incorporated the circular economy approach into solid waste management** through a 5-year development plan and 3 year rolling plan of KEP province for 2020
 - **Drafted a Deka on Solid waste management** in Kep and designed the legal framework for implementation of sub decree 113 on the Solid Waste Management in Kep province
- Development of CE business models in Kep
 - **Research on the financial situation of Solid Waste Management** in Kep to propose a viable CE business model in KEP was conducted
 - A CE business model focused on **proper waste separation and storage** at three locations in Kep was proposed

2.2 Design new business approaches to industrial waste with private sector

- The Department of Solid Waste Management has drafted a **guideline for on-site incinerators**.
- The Circular Economy Strategy and Action Plan has integrated key points for **engagement with private stakeholders and private sector engagement**.

2.3 Strategic communication and awareness raising

- Awareness raising
 - On 30th January 2020, the Department of Green Economy (DGE) conducted an **awareness raising event on plastic in Kep province** to share the impact of plastic use to the target audience and to strengthen the cooperation between the sub-national and national level. There were **136 participants (60 women)** from line ministries including the Department of Solid Waste Management, Department of Administration, Planning and Finance, GDLC, the General Directorate of Environment Protection (GDEP) and the representatives from sub-national government, city hall and the PDoE.
 - A **signboard with 5Rs** was installed in several highly visible areas in Kep and Kompong Cham. During the installation, the DGE also invited youths and local authorities to attend. There were 96 attendees, including 39 women.
 - On November 4th two virtual sessions for the **2020 Waste Summit** were hosted. The first titled "Circular Economy as a solution for resource and waste challenges for Cambodia" featured representatives from MoE and NCSD while the second titled "What can businesses and citizens do to promote green and circular economy business models?" featured representatives from the private sector
- Research and outreach on the Informal Waste Sector
 - 10 interviews and one focus group were conducted to identify the **impact of COVID-19 on the informal waste sector**. In December 2020, relief packages were distributed to 600 informal waste pickers in Phnom Penh

2.4 Development of Enabling Policy and measures for Circular Economy (CE)

- National CE strategy development
 - The DGE developed a draft of a **national Circular Economy Strategy and Action Plan** and consulted with the relevant line departments. The DGE conducted the consultative meetings within the two target areas: Kep and Kampong Cham and Siem Reap provinces in June and September 2020.

- From September 8 – 10 a **national consultation workshop** for the Circular Economy Strategy and Action Plan was held to receive feedback from relevant ministries. The feedback was implemented into the strategy
- The CE Strategy and Action plan now has been translated into Khmer Version and expected to be launched in 2021.
- Regulations on plastic
 - The department of Solid Waste Management has drafted a **sub decree on plastic management** with support from a national circular economy consultant.
 - The DGE team has worked with the circular economy consultant and produced a draft of zero plastic guidelines for hotels and guesthouses.

2.5 Design and implement private sector engagement

- Design of Circular Economy Platform
 - A database was developed to document **circular economy best practices** by the private sector in Cambodia
 - Contents for a **website** including **10 awareness raising posters, and 6 blog posts** were developed to increase awareness on actions private sector business can take in promoting circular economy options along with the information of organizations and businesses that can provide support interested businesses for the transition.
 - Launch of the platform will be done in the first half of 2021
- Rewards and Incentives
 - 94 businesses and organizations throughout Cambodia (4 in Kep) received a **certificate of appreciation** for their environmentally positive practices

2.6 Programming and resource mobilization

- A proposal was submitted to Co-Impact which is sponsored by New Venture fund. The proposal focused on systems change within the circular economy and the informal sector.
- A new project on Combating Marine Plastic Waste was approved and will start in January 2021. Funding of US\$ 3,028,851 was provided by the Embassy of Japan.

Area 3: Energy

3.1. Solar energy for improving energy access and increase resilience of rural communities

- Installation of DC-Micro Grids
 - MME installed **solar based DC micro-grids in three villages** namely *Steung Chrow & Prek Spean Village*, Preak Kokir Commune, Boribour District and *Ta Daok Village*, Pralaymeas Commune, Kampongling District, Kampong Chhnang Province benefitting 140 households.
 - In close consultation with the technology supplier Okra Solar, Electricity Authority of Cambodia and MME **finalized Operation & Maintenance Contract** for the DC-Micro Grids. Further, **electricity tariff was finalized** at KHR610/kWh (for maximum use of 750 Wh/day) and KHR730/kWh (750 Wh – 1,800 Wh/day) with a sign-up fee of 7.5\$ per household.
 - **The inauguration of the first 100 households** connected to the solar DC microgrid was held on 21 December 2020 at Steung Chrow Village with participation from H.E. Victor Jona, Director General of Energy, Mr. Nick Beresford, UNDP Resident Representative, Mr. Afnan Hannan, CEO of Okra, local authority, and local beneficiaries. The ownership of the system is being transferred to the community to manage and operate with establishing a

community management committee, while MME and EAC are serving as the management board of the microgrid system.

- **Clean Energy Incubator**
 - The progress of four business ideas under the Clean Energy and Agriculture Incubator programme and associated LVG contract with EnergyLab was extended until 30 April 2021.

3.2. Building technical capacity for installation of solar, and their maintenance

- **Two 2-day technical training workshops** on System Design, Installation, and Maintenance of Solar Home System (SHS) were delivered in February and November to solar technology suppliers, MME's technical staff, provincial departments of energy, and communities. Total participants of both the trainings were 73 including 21 females.
- BESD-GDE staff also received **training from Okra on the operation of DC microgrid management software**. The training covered data retrieval from household, monitoring and managing the usage of each household on Okra website platform.
- The **low value grant to Solar Energy Association of Cambodia (SEAC) to develop, represent and advocate for solar energy sector development in Cambodia was terminated** in February 2020 due to limited progress in their work. The remaining budget was transferred back to BESD budget.

3.3. Strategic communication and awareness raising

- **Two awareness workshops were conducted** to local communities in January and August 2020 with a total participation of 95 persons including 34 females from the target communities for piloting solar energy access. Topics in workshop were solar home system, application of clean energy technologies in agriculture, solar technologies and demonstration of SHS.
- The BESD-GDE had **published 350 copies of SHS leaflet in English and Khmer** and produced a video documentary on SHS and its basic maintenance. All the communication products have been shared widely by Telegram groups and during the workshops organized by BESD-GDE. Copies of these awareness material are available on UNDP Cambodia website as well.

3.4. Development of enabling policies and measures for solar

- **Economic Appraisal of the Potential of Solar PV Energy in Cambodia** was finalized soon after the final TWG consultation workshop on 26 June. Later, the report went through multiple internal reviews from all memberships of the TWG, resulting in increasing the scenarios from three to five for uptake of solar in Cambodia. The publication layouts were finalized - full report, summary of report in English and summary of report in Khmer. Finally, NCSD/MOE is revising the preface including disclaimer before submitting to Minister of Environment for approval.
- **Solar Home System (SHS) Guideline** was completed with a final consultative validation workshop on 04 May 2020 via video conference. Main contents of guideline are about SHS, technical standard, design of SHS, SHS installation, and operation and maintenance of SHS.
- **A study tour on renewable energy to Sweden was cancelled** due to international travel restriction imposed because of COVID-19 pandemic.

3.5. Programming and resource mobilization

- BESD extension for January to June 2021 was completed and the project board and Swedish Embassy approved the activities to be conducted during these 6 months period.

PROGRESS ON PLANNED ACTIVITIES AND RESULTS FOR THE PERIOD FROM JANUARY – JUNE 2020 AGAINST INDICATORS

UNDP Strategic Plan Output Alignment: 1.4.1 Solutions scaled up for sustainable management of natural resources, including sustainable commodities and green and inclusive value chains			
CPD Outcome Alignment:			
<p>2.1: Targeted cities and urban centers prepare and operationalize solid waste management plans to reduce environmental pollution impact from solid waste.</p> <p>2.3: Rules and regulations formulated and adopted for forest/natural resource management and market solutions developed for conservation and renewable energy.</p>			
CPD Output Alignment:			
<p>3.2.3: The extent to which natural resources are protected, conserved and sustainably managed as measured in: (i) Percentage of forest cover; (ii) Percentage of protected area (i) Baseline (2016): 48.14% Target (2023): TBD; (ii) Baseline (2018): 41% Target (2023): TBD</p> <p>3.3.1: Number of multi-sectoral policies, legislation, plans and strategies relevant to sustainable production and living, which are developed/updated Baseline (2018): 7 Target (2023): 15</p>			
CPD Output Indicator(s) Alignment:			
<p>Output 1.4.1: Solutions scaled up for sustainable management of natural resources including sustainable commodities and green and inclusive value chain</p> <ul style="list-style-type: none"> ● Indicator: Natural resources that are managed under a sustainable use, conservation, access and benefit sharing regime: a) Area under sustainable forest management (hectares) ● Baseline (2017): 776.046 ha (under CF and CPAs); Target (2020): 1 million ha <p>Output 1.5.1: Solutions adopted to achieve universal access to clean, affordable and sustainable energy</p> <ul style="list-style-type: none"> ● Indicator: Number and proportions of households benefiting from clean, affordable and sustainable energy access disaggregated by a) women-headed, b) in rural areas, c) in urban and peri urban areas ● Baseline (2017): 0; Target (2020): a) 50 HH, b) 200 HH, c) NA. 			
Output Indicators	Baseline (2018)	Target (2020)	Status (Achievements and Challenges)
Output 1: CBNRM institutions strengthened and financial resources mobilized for sustainable NRM			
<p>1.1. Extent to which CBNRM institutions are strengthened Measured on a three-point scale: 1= Some extent: 2= Moderate extent: 3=Great extent:</p>	0	<p>Target: 1</p> <p>Result: 2</p>	<ul style="list-style-type: none"> ● Since Jan 2020, the Department of Community Livelihood has conducted a series of activities including Community Network Meetings, a consultative meeting with CPA committee, CPA by-law, CPA Management Plan zoning. These included <ul style="list-style-type: none"> ○ 25-26 February: Community network Meetings with 53 participants ○ 17-21 March: 5th annual meeting with 5 CPAMCs with 373 participants including 178 women ○ 22-28 April: Consultation meeting with CPA committee with 120 participants including 17 women ○ 4-13 May: CPA Management Plan Zoning was conducted with four communities which included 93 participants 27 of whom were women ○ 18- 31 May: Community based natural resource assessment was conducted/ 130 plots were assessed with 91 participants including 31 women. ● CPA expansion was proposed covering hiking trails and 4 waterfalls with high potential

			for community-based ecotourism run by a committee, comprising of CPA and ADF.
1.2. Number of total and female headed households benefit from CBNRM	N/A	Target: 30 Results: 990– women attended in the tree planting	<ul style="list-style-type: none"> • Today, the total of connected families to water increased from 27 to 37, including 88 females of which 3 are widows. Storage capacity of each reservoir increased reaching 14,700 litres and 29,400 litres for both reservoirs. • 13 families began substitute livelihood activities. Two families are raising chickens and 11 are raising pigs, comprising of eight women (including 5 widows) are in charge of pigs rising activities. • Additional families (fruit trees growing: 3 families, black ginger farming: 16 families). Therefore, 32 households including 18 females. This represents 50 % of the households in Khlah Khmum village (Commune data, 9 June 2020). • As December 2020, 1,345 workers which is equal to 1,067 families who affected by COVID-19 actively participated in planting trees. 51% of them were women and there were 301 women-headed households affected by COVID-19.
1.3. Extent to which pilot PES approaches are operationalised for Kulen Mountain Measured on a three-point scale as below: 1=Some extent: Initial fund collection and distribution mechanism agreed 2= Moderate extent: PES operational mechanisms (including fund collection & management, implementation strategies and arrangements, and monitoring system) designed 3=Great extent: PES operational mechanisms implemented	N/A	Target: 2 Result: 1	<ul style="list-style-type: none"> • The Royal Government of Cambodia (RGC) has issued <i>Sor Chor Nor No. 1119</i> on Piloting of Payment for Ecosystem Services (PES) in Phnom Kulen National Park (PKNP) and Kbal Chhay Multiple Use Area (KCMUA) (RGC, 2016). • During this period, the DBD has accomplished as follows: <ul style="list-style-type: none"> ○ Financial mechanism for piloting the PES in Phnom Kulen National Park (Siem Reap) and Kbal Chhay Multiple Use Area (Sihanoukville). The inter-department meeting with the senior management of DBD conducted and agreed on the draft PES management governance structure and fee collection mechanism, pending an approval from the minister. ○ The DBD reviewed and defined practical options for implementing the PES within the two target provinces: <ol style="list-style-type: none"> 1. PES in Kbal Chhay, Sihanoukville <ul style="list-style-type: none"> ○ Voluntary contribution from a big volume of water users (commercial water users) ○ Tax on water usage in the purpose of commercial (producers and retailers) 2. PES in Phnum Kulen National Park, Siem Reap <ul style="list-style-type: none"> ○ Voluntary contribution from a big volume of water users (commercial businesses) ○ Tax on water usage in the purpose of commercial (producers and retailers) ○ Integrate in the receipt when the tourists visit Angkor Wat or put as the value added taxes at the airport.
1.4 Extent to which pilot PES approaches are operationalized for Kbal Chay	0	Target: 2 Result: 1	Based on the result finding from the conceptual design and result framework, PES could be implemented as above.

Measured on a three-point scale as above.			
<p>1.5 Extent to which a national PES policy is developed</p> <p>Measured on a three-point scale: 0= None: No initial drafts 1= Moderate extent: Initial assessment and analysis 2= Great extent: final draft of policy ready for endorsement</p>	0	<p>Target: 1</p> <p>Result: 2</p>	<p>A PES Mechanism for PES in PKNP and KCMUA is listed as below:</p> <ul style="list-style-type: none"> • The formulation of PES pilot mechanism is mainly set up the implementation structure which covers the financial flow and its management. • Within the boundary of the existing legal framework, the utilization of the fund will be possible and only under the Environmental and Social Fund (ESF). However, this requires policy intervention at the mistrial level to set up the sub-committee or provincial PES committee. • The policy paper for collection of PES fund from hotels and the tourism sector and leveraging the existing ESF to support PES and Protected Areas were recommended to wait after post- COVID-19 period. • The cost estimation for implementing the PES in both provinces was conducted. The conceptual design and result framework have been done in Phnom PKNP and KCMUA • The draft PES governance structure and roadmap were consulted at the 2nd Technical Working Group on Biodiversity on 27 November 2020. At least, 45 key focal points who are TWG members provided their technical inputs in governance structure to ensure smooth implementation at national and provincial levels while building trust for ecosystem service users at both pilot and operationalized stage. • Four technical guidance documents for Kulen and Kbal Chhay drafted, such as <ol style="list-style-type: none"> 1. Conceptual design and result framework, 2. PES funding mechanisms, 3. PES Management Plan for Kbal Chhay, 4. PES Roadmap (2021-2030) drafted and inputs have been collected from 45 key focal points across ministries at the 2nd Biodiversity TWG on 27 Nov 20.
<p>1.6 Extent to which gender concerns are integrated into the proposed policy measures</p> <p>Measured on a three-point scale: 1= Some extent: relevant policy documents refer to their possible impacts on men and women 2= Moderate extent: relevant policy documents refer to their possible impacts on men and women and include some measures to ensure positive impacts</p>	0	<p>Target: 2</p> <p>Result: 2</p>	<p>Gender is centrally considered in most of the project activities. To highlight a couple of examples as below:</p> <ul style="list-style-type: none"> • From tree planting activities, the project team aimed to reach up to 50% workers are women, women headed households. As a result, out of 1,345 workers which is equal to 1,067 families who affected by COVID-19 actively participated in planting trees. 51% of them were women and there were 301 women-headed households. • Besides this, gender roles in natural management such as CPA management committees, forest inventory and capacity building events were also empowered. • For livelihood activities, both men and women were shared their role water management committee and • Gender is considered as the cross-cutting issues, which was included in both national and sub-national PES fund governance structure.

3=Great extent: relevant policy documents include full measures and budget to ensure positive impacts			
1.7 Volume of financial resources mobilized to support proposed measures, measured in USD	0	Target: 0 Result: GoAI Waters: \$135K	<p>No additional PES fund generated yet to support the two targeted protected areas has been mobilized this period.</p> <p>However, PES was prioritized with two proposals for World Bank IDA loan sustainable landscape project and GEF Integrated Natural Resources Project. Through this, it is anticipated that some budget will be set aside to support PES scaling up work beyond the duration of this project.</p> <p>A proposal focuses on freshwater and wastewater management was approved by the Water and Ocean Programme (GoAI Waters) for Kbal Chhay. It will directly contribute to the PES related work of the areas in terms of developing monitoring framework for watershed services.</p>
1.8 Number of people with improved awareness on benefits of biodiversity and PES approach Measured by the number of people outreached by communication materials	0	Target: NA Results: 29,200	<p>At least 29,200 people reached through UNDP Facebook campaign regarding the PES approach and importance of key watershed in Kulen and Kbal Chhay in 2020. The media contents and related articles listed in the Knowledge sharing package below. Please note that the number of people reached should be higher if the data of the project implementing partners could be captured.</p> <p>Between 18-21 December 2020: H.E. Neth Paktra, secretary of State , MOE has led 30 journalists and news reporters to conduct a mass media campaign on PES for saving Kulen National Park. More than ten news articles were published and podcasted.</p>
1.9.1 Number of families being enrolled in income generating activities such as tree-planting, maintenance of forest plantation and nursery development (activity 1.8)	0	Target: 1600 Result: 1,067 – Under target	<ul style="list-style-type: none"> 1,345 workers which is equal to 1,067 families who affected by COVID-19 actively participated in planting trees. 51% of them were women and there were 301 women-headed households.
1.9.2 Number of Hectares new tree-plantation and number of Ha maintained	0	Target: 80 ha Result: 131.93ha – Over target	<ul style="list-style-type: none"> At least 97,800 local trees were planted to restore ecosystem of 131.93 ha in two provinces: Pursat and Siem Reap. In addition, a nursery of flooded tree for reforestation in the conservation area of the Tonle Sap Lake has been established. Over 50,000 flooded tree seedlings of 5 local species produced and maintained. These seedlings will be planted in early 2021 on 50 ha of flooded areas in 3 districts of Siem Reap Province.

<p>1.9.3 Dollars paid out as cash compensation for work under activity 1.8</p>		<p>Target: USD 100,000</p> <p>Result: USD 148,275 – Over target</p>	<ul style="list-style-type: none"> At least, US\$148,275 was directly paid to 1,345 tree planting workers, which is equal to 1,067 families. 51% female workers and 301 women-headed households have benefited from this COVID-19 response.
<p>Output 2: Waste reduced, recycled and reused through application of circular economy models</p>			
<p>2.1. Extent to which a pilot is designed and implemented (municipality) Measured on a three-point scale: 0= None extent: Pilot is not designed 1= Moderate extent: Business model for pilot is designed, proposed, and consulted on with stakeholders 2=Great extent: Pilot is designed and implemented, with a business model tested and resulting data collected.</p>	<p>0</p>	<p>Target: 1</p> <p>Result: 1</p>	<p>Under the NCDDS section, there are a number of results achieved. These results help lay the foundation which needs to be in place for a circular economy model.</p> <ul style="list-style-type: none"> Mainstreamed and incorporated the circular economy and solid waste management into in a-five-year development plan and 3-year rolling plan of Kep province for 2020. Site assessment for waste sorting options at the landfill and key markets in Kep was conducted. Prepared and designed the legal framework for implementation sub-decree 113 on the Solid Waste Management in Kep province. Deka on solid waste management in Kep drafted For Kep CE business model, it was conducted, and the waste separation points or stations were selected, but the construction will be taken place in the next reporting period. 60 separated trash bins were installed the in Kep city for improving solid waste management
<p>2.2. Extent to which a circular economy pilot is designed and implemented (industry) <i>Measured scale as in 2.1 indicators & targets</i></p>	<p>0</p>	<p>Target: 1</p> <p>Result: 1</p>	<ul style="list-style-type: none"> Guidelines on on-site incinerators have been drafted and under a consultation process to reflect the recommendation from the assessment of garment’s on-site incinerators.
<p>2.3. Number of people outreached for raising awareness on appropriate waste management Measured by number</p>	<p>0</p>	<p>Target: 400</p> <p>Results:</p> <p>DMC: 203,029 – Over target</p>	<p>Outreach campaigns have been carried out with various responsible partners as below:</p> <p>Under NCS Department of Green Economy (DGE) and the Department of Solid Waste Management (DoSWM), the following points are some key results:</p> <ul style="list-style-type: none"> Assessment on COVID-19 impact on informal waste pickers and potential engagement strategies The plastic communication strategy was drafted to support the Department of Green Economy. DGE conducted two awareness raising as following: <ul style="list-style-type: none"> 30 Jan 2020 in Kep there were 136 people (60 women) Launching of 5R stand in Kep (6 July-20) and Kampong Cham (4 Sep 2020), there were 96 participants (39 women)

			<p>Two academic institutes were engaged for youth-led plastic campaigns. The following are the key results:</p> <ul style="list-style-type: none"> • <u>Department of Media and Communications (DMC), RUPP</u> <p>For one and half month campaign, the DMC student-led Facebook page (RE-Five) have generated 1,256 likes on the Refive Facebook page with 1,329 followers. Additionally, the public keep following the posted content consists of posters, photos, and videos relating to plastic campaign and changing their lifestyle to reduce plastic via Facebook have reached an approximately 203,029 people, mainly youth.</p> <p>Besides that, so far 25 articles have been received from the candidates, which could be found at https://www.facebook.com/ReFiveCambodia/posts/125041226079068</p> <p>Digital Poster: 9 posters about environment issue was produced and published on our official Facebook page. And we can reach for the audience 42,669 reach.</p> <ul style="list-style-type: none"> • <u>National University of Management (NUM):</u> <ol style="list-style-type: none"> a. Three videos have been produced and being edited. (To be updated) b. 100 reusable bottles/tubulars produced and distributed for digital economy staff and students <p>BESD project page website which includes video and awareness raising on NRM and Solid waste management has 79,634 page views from 17,604 unique visitors.</p>
<p>2.4. Extent to which enabling policy measures are developed for the support of circular economy</p> <p>Measured on a three-point scale: 0= None: 1= Moderate extent: an initial set of policy measures are proposed 2= Great extent: agreed set of measures receive government endorsement</p>	<p>0</p>	<p>Target: 1</p> <p>Result: 1 - Achieved</p>	<ul style="list-style-type: none"> • Overall result: The Circular Economy Strategy and Action Plan was drafted and a series of consultative meetings participated by over 130 participants (from the line departments of the Ministry of Environment, the National Council for Sustainable Development (NCSD), the National Committee for Sub-national Democratic Development (NCDD) and key development partners were conducted. • The MoE/NCSD established the special taskforce on plastic, focusing on four sets of interventions: 1) policy and regulation on plastic reviews, 2) Plastic waste communication and outreach, 3) lead by example for MoE to taking plastic waste, and 4) Policy recommendations. During this reporting period, the taskforce is being merged with a newly established Technical Working Group on Sustainable Consumption and Production. • The department of solid waste management has drafted a sub decree on solid waste management with support from a national circular economy consultant.

<p>2.5 Extent to which a private sector engagement strategy is designed and implemented</p> <p>Measured on a three-point scale: 0= none 1= Moderate extent: Strategy is designed but not implemented 2= Great extent: Strategy is operationalized including an online platform and pilot initiative</p>		<p>Target: 1</p> <p>Result: 1-Achieved</p>	<ul style="list-style-type: none"> ● Mobilization of the private sector engagement and fund to foster business led innovation for CE (e.g. marine plastic). The online platform and content was designed. ● At least four resorts and hotels in Kep were awarded for their environmentally friendly practices, 94 business and organizations were awarded nationwide. This is to acknowledge their green business to reduce their waste while inspire others to adopt the new way of doing business.
<p>2.6 Volume of financial resources mobilised to support proposed waste management measures, measured in USD</p>	0	<p>Target: US\$500K</p> <p>Result: Over US\$4 million – Over target</p>	<ul style="list-style-type: none"> ● A new project on Combating Marine Plastic Waste was approved and will start in January 2021. Funding of US\$ 3,028,851 was provided by Embassy of Japan. ● Medical waste proposal with a total budget of US\$834,000 was also approved.
<p>Output 3: Improved access to clean, affordable, and sustainable energy for the rural poor</p>			
<p>3.1 Solar PV energy business models or new technologies developed to provide electricity, incl. for productive use</p> <p>Measured by number of business models/technologies</p>	0	<p>Target: 2</p> <p>Result: 1 technology for solar access; 1 business model and 4 business ideas selected – Over target</p>	<ul style="list-style-type: none"> ● Solar based DC microgrid equipped with Okra smart mesh-grid technology provides 24/7 clean energy to communities for productive appliances from refrigeration to electric cooking - demonstrating the power of renewable off-grid energy solutions ● DC microgrid is a sustainable business model to electrify the remote off-grid communities. ● Clean Energy and Agriculture Incubator programme was launched with EnergyLab. Out of 10 business ideas, 4 have been shortlisted. Three (3) teams have completed their prototype and attracted first customers. They are in the process of identifying investors.
<p>3.2 Number of rural households benefit from solar PV system installed for access to energy incl. for productive use</p> <p>Measured by number households (male and female headed)</p>	0	<p>Target: 100</p> <p>Result: 140 – over target</p>	<ul style="list-style-type: none"> ● The DC microgrid electrifies 140 households across three villages, including 19 female headed households to benefit from DC based micro-grid in Kampong Chhnang province. ● The project supported relocation of solar PV panels from MOE and install 32.64kW solar off-grid system at Sre Ampil community, Teuk Pous District, Kampong Chhnang Province with newly procured off-grid inverters and battery storage (86.4kWh). Full installation of the system is expected to be completed by March 2021.
<p>3.3 Number of female headed households benefit from solar PV system installed for access to energy, water and productive use</p>	0	<p>Target: 25</p>	<ul style="list-style-type: none"> ● 19 women headed families registered for Solar DC micro grid (the numbers are changing because some households have moved out of village) ● A total of 362 women benefited from Solar DC micro-grid out 707 total adults

Measured by number of households (female headed only)		Result: 19 – Under target	
3.4 Number of technicians with enhanced capacities to design, install and maintain solar PV as per installation standards/guidelines (to be prepared) Measured by number of male and female technicians	0	Target: 20 Result: 73 (21 females) - Achieved	<ul style="list-style-type: none"> Two 2-day technical training workshops on System Design, Installation, and Maintenance of Solar Home System (SHS) were delivered in February and November to solar technology suppliers, MME’s technical staff, provincial departments of energy, and communities. Total participants of both the trainings were 73 including 21 females. At the community, Okra as supplier and installer of microgrid has trained one local youth community member on the maintenance and operation of the microgrid. (Okra plans to train all members of the microgrid management committee during 2021.)
3.5 Number of community members with improved awareness on benefits of solar and appropriate use of solar technologies Measured by number of community members	0	Target: 20 Result: 95 (34 females) – Over target	<ul style="list-style-type: none"> Two awareness workshops were provided to local communities in January and August 2020 with a total participation of 95 persons including 34 females from the target communities for piloting solar energy access. Topics in workshop were solar home system, application of clean energy technologies in agriculture, solar technologies and demonstration of SHS.
3.6 Number of National quality standards/guidelines for solar PV technologies developed Measured by national quality standards/guidelines	0	Target: 1 Result: 1 - Achieved	<ul style="list-style-type: none"> SHS guideline was finalized and approved by MME. The guideline is being published.
3.7 Studies and papers prepared to support RGC in evidence-based policy making towards a balanced, low-carbon intensive energy mix with a secure supply of power	0	Target: 4 Result: achieved; four policy briefs	<ul style="list-style-type: none"> As per the 2nd board meeting on 20th September 2019 indicator 3.7 was approved. Four policy briefs were completed and submitted to NCSD-MOE for internal circulation within the energy sector government bodies, i.e. MEF, MME, EAC, EDC. The topics are <ul style="list-style-type: none"> Responding to Cambodia’s power sector challenges and role of sustainable energy Analysis and proposed adjustment of solar regulation Evaluation of the potential excess supply of power from existing solar rooftop system in Cambodia Cambodia: De-risking renewable energy investment
<p>Cross-cutting activity: Project Management Over this reporting period, the following results include: The project board meeting was conducted twice this year.</p> <ul style="list-style-type: none"> 13 March 2020, chaired by H.E. Dr. Tin Ponlok, the General Secretariat of the NCSD and the Project Director. The decision of the Board made as follows: <ul style="list-style-type: none"> The Board and implementing partners agreed to approve the fund flow and workplan in principle, with the budget approval to be made via email. This followed by the e-mail approval in August, the board agreed the injection of additional fund for tree planting as a COVID response. The project team followed up on this proposal and this workshop was moved to be combined with the next board to be more efficient including reviewing budget, workplan, and project progress. 			

The board approved

- The annual progress report and the reporting of expenditure for 2019
 - The revised budget and annual work plan for 2020
 - Risk and strategy of the project
- **18 December 2020:** A virtual board meeting conducted and the board approved the following:
 - The annual progress report and the reporting of expected expenditure for 2020
 - The budget extension and annual work plan for 2021
 - Risk and strategy of the project

On budget reallocation

- Recognizing that the project needs to achieve tangible results as a final year and considering the situation with Covid-19 that larger meetings may be less frequent, the board suggested that the implementing departments of these activities review their budgets for possible re-allocation from meetings, workshops, and study tours to on the ground activities piloting PES, circular economy in Kep as models to be replicated (for example investment in waste collection and sorting facilities), and second village for solar PV based micro-grid.
- Larger re-allocations of budget should be submitted to the board in accordance with modalities in the project document agreement

Ways forward

- For the final year project activities should be planned and implemented in a manner to develop workable models to provide effective solutions for environmental challenges related to natural resources management, waste management and energy.
- Important to think outside the box, and to strategically engage relevant people to bring about real changes on the ground, while drawing on lessons learned so far.
- It is also crucial to quantify the costs and benefits of environmental use/conservation in order to identify most appropriate policy interventions.

Project Monitoring:

- UNDP representatives and Swedish Embassy representatives visited Kulen National Park to monitor BESD activities. Those include meeting key recipients, rangers, visiting the Popel water system and the Khlah Khum PA on the 27th of February 2020.

QUALITY OF RESULTS

<p>Sustainability: <i>Do the benefits of the achieved results have potential to last past this quarter?</i></p>	<p>The overall project management and arrangements of task division were working well as per agreed steps and actions. In addition, strategic communication for Component 2 has been conducive to inducing behavioral changes in the long run among target stakeholders.</p> <p>Microgrid was setup with a community management on operation and maintenance with technical support from supplier, to ensure the microgrid will run smoothly and sustainably.</p>
<p>National Capacity: <i>How do the project results help strengthen national institutions and service delivery?</i></p>	<p>As this project is implemented under NIM, most activities are planned and implemented by key government partners. On-the-job training ‘learning by doing’ has helped them improve their knowledge and skills. Additional technical assistance and quality assurance have been provided by UNDP CO to enhance the national capacity for effective service delivery, partnership and regulation development or amendment where applicable.</p> <p>GDE took a leading role in facilitating consultations for the CE strategy and action plan, providing technical inputs on the preparation of the solar home system guideline, bidding for microgrid, community setup, awareness raisings and training workshops.</p>
<p>Gender Equality and Women’s Empowerment: <i>How does the project contribute to promoting gender equality and women’s empowerment?</i></p>	<p>Gender equality has been a key goal in every planned activity. This ranks from staff recruitment to local participants in the project activities. Gender assessment was conducted in the first quarter of 2019 and continue to be monitored over the implementation period. The project has reached gender targets for Component 2. While the other two components have contributed more as well. For example, women and children have accessed to water system in Popel village. The social and environment was rapidly assessed for COVID-response activities when recruiting the workers for planting trees and building a tree nursery. At least 47% of recipients are women in this field and local partners and authorities realize the importance of women’s empowerment in the implementing and monitoring the project activities.</p>
<p>Youth Engagement: <i>How do the project results support youth in contributing to sustainable human development and peace? *optional*</i></p>	<p>A good example of youth engagement has been done through RUPP student led plastic free campaigns. Video competition will result in products of youth-led solutions to plastic waste management. During the water festival, over 9 million viewers, mainly youth have followed plastic campaigns.</p> <p>The Youth has played a central role in the clean energy incubator programme and act as local technical agent for the solar DC microgrid (received training from Okra)</p>
<p>Climate Change: <i>How do the project results help increase resiliency and reduce vulnerability to climate change? *optional*</i></p>	<p>The project has contributed to the outcome of climate change. This is done through reducing pressure to natural carbon stock in the projected areas and waste generation and emissions from fuel-based energy.</p> <p>Delivering the microgrid helps community to use electronic cooker, water boiler, lighting and even refrigerator. This helps reducing indoor air pollution and need of firewood.</p>

No One Left Behind: <i>In what way do the project results help left behind communities and individuals? *optional*</i>	The project's target groups include women-headed, vulnerable households and rural households who lack access to rural electrification.
---	--

INNOVATION

What innovation initiatives have been implemented in the project?

What innovative methods were applied or tested this quarter?	<input checked="" type="checkbox"/> Alternative Financing <input checked="" type="checkbox"/> Behavioral Insight <input type="checkbox"/> Blockchain <input checked="" type="checkbox"/> Challenge Prizes <input type="checkbox"/> Crowdsourcing <input type="checkbox"/> Crowdfunding <input type="checkbox"/> Foresight <input type="checkbox"/> Games for Social Good <input type="checkbox"/> Hackathon <input checked="" type="checkbox"/> Human-Centered Design <input checked="" type="checkbox"/> Innovation Lab <input type="checkbox"/> Micronarratives	<input type="checkbox"/> Mobile-Based Feedback Mechanism <input type="checkbox"/> New and Emerging Data (e.g. Big Data) <input type="checkbox"/> Positive Deviance <input checked="" type="checkbox"/> Private Sector Partnership <input type="checkbox"/> Randomized Control Trial/Parallel Testing <input type="checkbox"/> Real-Time Monitoring <input type="checkbox"/> Remote Sensing/Unmanned Aerial Vehicles (UAVs) <input type="checkbox"/> Other (specify below)
---	--	--

If 'Other' was selected, please specify what innovative initiative was implemented and what the result of the initiative was:

SOUTH-SOUTH AND TRIANGULAR COOPERATION

Describe how South-South and Triangular Cooperation has contributed to your project?

Was South-South and Triangular Cooperation promoted and utilized through the project?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
--	--

If yes, briefly explain how. List countries engaged.	<p>For circular economy model, the project has explored the applicable solutions with Asian nations as well as from western world.</p> <p>For PES, MOE is pursuing its collaboration with Costa Rica and exploring some practical lesson in the region, including China.</p>
---	--

COMMUNICATIONS, KNOWLEDGE MANAGEMENT AND VISIBILITY

The following communications results are listed below:

Knowledge Product Produced this year	Type	Date Published/ Produced	Target audience (# people reached)	Link (if available)
Plastic campaign page in Khmer as a sub-page under the MoE website	Awareness	January 2020	Public audience	https://www.moe.gov.kh/togetherreduceplastic
Site monitoring video	Awareness	January 2020	Donor and the board members	Soft copy is available
5 ways to reduce plastic	Awareness	2 Jan 2020	Public audience	https://www.facebook.com/UNDPCambodia/photos/a.144313525635777/2861740583893044/
Sweden visit Kulen National Park	Awareness	27 Feb 2020	As above (7.5K)	https://www.facebook.com/UNDPCambodia/photos/pcb.2981880235212411/2981877691879332/
Solar water pump in Kulen as a livelihood option	Awareness	26 Feb 2020	As above (3.1K)	https://www.facebook.com/UNDPCambodia/photos/a.144313525635777/2979025518831216/
The importance of Kulen ecosystem for fresh water in Siem Reap	Awareness	24 Feb 2020	As above (7.3K)	https://www.facebook.com/UNDPCambodia/photos/a.144313525635777/2975678055832629/
BESD project pager	Awareness	March 2020	Public audience/ partners	http://ncsd.moe.gov.kh/besd
3 rd Project Board Meeting	Other	13 Mar 2020	As above	https://ncsd.moe.gov.kh/dapf/news/3rd-board-meeting-building-enabling-environment-sustainable
Draft Circular Economy Strategy and Action Plan	Other		As above	A soft copy is available
The management of Kulen National Park video	Awareness	04 June 2020	As above (54.5K of Reach)	https://www.facebook.com/UNDPCambodia/videos/2672020926411931/ https://www.facebook.com/UNDPCambodia/videos/2599298003684224
Financing biodiversity conservation options linking to PES	Awareness	21 May 2020	As above (3K)	https://www.facebook.com/UNDPCambodia/photos/a.144313525635777/3179431568790609/
SHS leaflet	Awareness	August 2020	Public audience/equipment suppliers	Soft and hardcopies are available
Knai Bang Chatt Featuring CE in practice	Awareness	August 2020	Public audience	Soft copy is available
Video documentary on Solar Home System (SHS)	Awareness	September 2020	Public audience / equipment suppliers	Soft and hardcopies are available
Series Video 1: A DMC led video related to reducing the plastic at home and school was produced and published on RE-five Facebook page with sharing on DMC Facebook page on	Plastic campaign	24-Nov- 20	Youth audience (17.9K visitors and 43.9K reach)	https://fb.watch/26Udmzu71q/
Guest Speaking Video: We invited Miss Sotheavy At, Founder of "Think Plastic" to	Plastic campaign	29-Nov-20	Public audience (11.7K viewers and 23.7K reach)	Instagram: https://www.instagram.com/ReFiveCambodia/ YouTube: https://www.youtube.com/channel/UC-X_z16vTcfyejqwYwWykqg/

Knowledge Product Produced this year	Type	Date Published/ Produced	Target audience (# people reached)	Link (if available)
share her experience about changing to plastic free lifestyle.				Facebook: https://web.facebook.com/ReFiveCambodia
Series videos 2: A video for reducing the plastic at work and public	Plastic campaign	6-Dec-20	Public audience (11.4K viewers and 23K reach)	https://fb.watch/2ohgicOgj/
Urgent action is required to tackle marine plastic litter	Awareness	09-Dec-20	Public audience (1.3K)	https://www.facebook.com/141301635936966/posts/3753112431422517/?d=n
Environment ministry sounds alarm over rising air pollution	FB Content	15-Dec-20	(3.1K)	https://www.facebook.com/141301635936966/posts/3767745756625851/?d=n
25 articles have been received from the candidates	Essay	15-Dec-20		https://www.facebook.com/ReFiveCambodia/posts/125041226079068
How to make cloth face marks by DMC/RUPP students	Plastic campaign	15-Dec-20	Public audience (8.4K viewers and 21.9K reach)	https://fb.watch/2HQVX9TCfA/
Opportunity for Cambodia to set example of environmental sustainability	Awareness	17 Dec 2020	(2.4K)	https://www.facebook.com/141301635936966/posts/3772971339436626/?d=n
NUM to go plastic free from January	Plastic campaign	13-14 Dec 20	Public audience (54.3K)	https://bit.ly/2JV3WmS Khmer Times https://www.facebook.com/141301635936966/posts/3765795766820850/?d=n https://www.facebook.com/141301635936966/posts/3767745756625851/?d=n
Cambodia faces plastic woes	Awareness	17 Dec 20	Public audience (6.7K)	https://bit.ly/3gUObrR The Phnom Penh Post
Providing supplies to informal waste pickers in Phnom Penh	Awareness	17 Dec 2020	Public audience (5.9K)	https://www.facebook.com/141301635936966/posts/3773435679390192/?d=n
BESD summary result video	Awareness /knowledge sharing	17 December 2020	BoD and project partners	Soft copy is available
Informal waste pickers play a vital role in the recycling and circular economy in Cambodia	Awareness	21 Dec 2020	Public audience (4.2K)	https://www.facebook.com/141301635936966/posts/3784027301664363/?d=n
Big water companies have been urged to make voluntary contributions or pay for commercial water use for sustainable ecosystem services (PES)	Awareness	20 Dec 20	Public audience (2.4K)	https://www.facebook.com/141301635936966/posts/3784027301664363/?d=n
Inauguration of DC Micro Grid in Steung Chrov Village, Kampong Chhnang Province	Awareness	21-22 Dec 20	Public audience (12.9K)	https://www.facebook.com/141301635936966/posts/3784322071634886/?d=n https://www.facebook.com/141301635936966/posts/3784509974949429/?d=n https://www.facebook.com/141301635936966/posts/3788786451188448/?d=n
Kampong Chhnang villages powered by solar published in the Phnom Penh Post	Awareness	22 December 2020	Public audience	https://www.phnompenhpost.com/national/kampong-chhnang-villages-powered-solar

Knowledge Product Produced this year	Type	Date Published/Produced	Target audience (# people reached)	Link (if available)
Village first to get 'smart-grid' in Kampong Chhnang province	Awareness	23 December 2020	Public audience	https://www.khmertimeskh.com/50796286/village-first-to-get-smart-grid-in-kampong-chhnang-province/
A series of three videos on RUPP youth-led plastic social media campaigns posted on	Campaign	Dec 2020	Youth ad public audience	Soft copies are available
Series videos 4: A video related Before and After plastic-free lifestyle	Plastic campaign	27-Dec-20	Public audience (8.4K viewer and 21.9K reach)	https://fb.watch/2HR0xWmpFC/

Was the project cited/quoted/featured in media reports/articles? <i>If yes, please provide link to article/video.</i>
<ol style="list-style-type: none"> 1. Cambodia: A man's journey to reduce plastic waste by turning it into diesel. Published in Asia News on February 19, 2020. https://asianews.network/2020/02/19/cambodia-a-mans-journey-to-reduce-plastic-waste-by-turning-it-into-diesel/ 2. Waste remains a challenge for Phnom Penh City (03/02/2020) https://www.rfi.fr/km/cambodia/chrono-03-02-2020 3. Solving Cambodia's Plastic Problem Seen as Key to Minimizing Waste. Published on VOA on 28 May 2020. https://khmer.voanews.com/a/solving-cambodias-plastic-problem-seen-as-key-to-minimizing-waste/5395699.html 4. Cambodia accelerates fight against single-use plastics. Published in Cambodian news on 05 April 2020. https://cambodianess.com/article/cambodia-accelerates-fight-against-single-use-plastics 5. Cambodia Starbucks Ends Plastic Straw Use. Published in https://cne.wtf/2020/01/31/cambodia-starbucks-ends-plastic-straw-use-on-31-Jan-2020. 6. Lessons from 2020: time for a circular economy. Published in Asian Times. https://asiatimes.com/2020/11/lessons-from-2020-time-for-a-circular-economy/ 7. Lessons from 2020: time for a circular economy in Khmer. Published in ThmeyThmey https://www.thmeythmey.com/?page=detail&id=97451 8. The following articles were published various media agencies to raise public awareness on PES at Kulen National Park between 19 and 21 December 2020. <ul style="list-style-type: none"> ▪ https://firstnews.asia/190-2/ ▪ https://www.information.gov.kh/detail/536369 ▪ https://vayofm.com/news/detail/106419-343357031.html ▪ https://m.facebook.com/story.php?story_fbid=1728125060695644&id=350615918446572 ▪ https://www.information.gov.kh/detail/536369 ▪ https://www.khmertimeskh.com/50795454/big-water-companies-urged-to-contribute-to-ecosystem-services/ ▪ https://www.phnompenhpost.com/national/pilot-ecosystem-initiative-draw-funds-kulen-water-use ▪ https://ams.com.kh/central/detail/214267?fbclid=IwAR0NQg1h_CtEO1LHXafRlNYt6Pgg94LQk1Bi9P4diM9GWiOJAvOSxIzVUw

	<ul style="list-style-type: none"> ▪ https://vayofm.com/news/detail/106450-597391933.html ▪ https://www.khi-newsdaily.com/detail/409854.html ▪ http://www.freshnewsasia.com/index.php/en/localnews/180966-2020-12-21-06-15-57.html ▪ https://www.facebook.com/freshnewsasia/videos/395076371917996 <p>9. Village first to get 'smart-grid' in Kampong Chhnang province</p> <ul style="list-style-type: none"> ▪ https://www.khmertimeskh.com/50796286/village-first-to-get-smart-grid-in-kampong-chhnang-province/ <p>10. Kampong Chhnang village powered by solar</p> <ul style="list-style-type: none"> ▪ https://www.phnompenhpost.com/national/kampong-chhnang-villages-powered-solar
--	--

PROJECT IMPLEMENTATION CHALLENGES

a. Updated Project Risks and Actions

See Annex 1 below for newly identified risks and actions.

b. Updated Project Issues and Actions

See Annex 2 below for newly identified project issues and actions.

KEY LESSONS LEARNT

1. **With regard to CBNRM, community ownership and cost contribution could help sustain the water supply system.** The water committee decided that each household has to pay for the connection from the main water pipe along the road to their house. In addition (via the use of a water meter) each villager will have to pay 1,500 Riels per cubic meter. The money is collected and managed by the Popel water user committee, which includes two women, to ensure the necessary for covering the maintenance of this water system.
2. **Adaptive management is key to become COVID resilient in implementing the Project.** The affected budget was repurposed to other activities including COVID responses while still contributing to the project objectives. Those included tree planting, increased investment in equipment for waste management and DC microgrid that help improve sanitation and electricity to local health centre. To ensure this to happen, collective understanding among implementing partners and the donor is key to COVID-19 response. During the months of strict lockdown, project personnel focused on drafting the CE Strategy and Action plan.
3. **Open communication and prior notification among Board members and donor is key to ensure the project’s ability to accommodate new actors and unanticipated changes and shocks and introduce and scale up new COVID response initiatives.** BESD is a platform that brings together a diverse set of actors to fight against COVID-19 and help the most vulnerable communities. This setting enabled other new partners to implement a newly funded tree planting initiative as a COVID response.
4. **Embracing new technologies provides new opportunities.** MME started thinking away from traditional solutions such as Solar Home System (SHS) to an interconnected model of micro-grids and/or mini-grids because of technology advancements. Micro-grids and/or mini-grids provides an opportunity to share the available energy within the community, flexibility in scale up of the system as electricity demand increase, and enable communities to use energy for productive applications.
5. **Solar DC micro-grid business model provides strong growth opportunities.** Solar based DC micro-grid piloted by the BESD project is based on the collected revenues from the sale of electricity

generated. This system could easily be managed by the community. The collected revenues provide an opportunity for the community to develop a CAPEX replacement and scale-up fund with the remainder of total collected revenues. In the case of this pilot, operation and maintenance (O&M) contractor will cover the cost of replacement and scale up from the collected fee to ensure remaining households will get reliable, affordable and clean energy delivered. However, there are some regulatory issues that need to be addressed in the sustainable operation of DC micro-grids. A dialogue is under progress between MME, EAC, and Okra Solar. If solutions are identified to these regulatory issues including tariff structure of DC micro-grids, it will have a wider implication including attracting more private investments.

- 6. Awareness is key to understand the complex solar business environment.** Events were held aimed at creating an awareness among rural communities on the basic operation and maintenance of the solar PV system. The Cambodian market is being flooded with solar PV systems of various quality. MME thus decided to educate end beneficiaries and users, on the identification of good quality solar PV system components and on the general SHS maintenance during this awareness raising event.
- 7. Solar home system (SHS) suppliers and distributors are committed towards improving the quality of SHS.** The project finalised SHS guidelines and leaflet in close collaboration with private sector, mainly SHS suppliers and distributors. Their involvement in finalising these guidelines showcases that they are committed considering the challenges they faced with poor quality systems in the past.
- 8. Tree planting requires strict scheduling and training or else mortality rate will be high.** Trees were planted in late raining season, so it requires significant effort and resource to maintain the planted trees. Mortality rate may still be high. With the large number of workers, tree planting techniques (digging hole, root up grass around planted tree, removing seedling plastic container) should be properly managed. Training at least to representatives or group supervisors of workers should be done.

Table 1: Contribution Overview (01 January 2019– 31 December 2020)

Donor Name	Contributions (USD)		Total Received	Cumulative Expenditure	Balance	Remarks
	Committed in 2020	Received				
Sweden	2,228,105.29	2,228,105.29	2,228,105.29	1,906,571.48	321,533.81	
UNDP [TRAC]	280,112.26	280,112.26	280,112.26	279,998.78	113.48	
Total	2,508,217.55	2,508,217.55	2,508,217.55	2,186,570.26	321,647.29	

Table 2: Cumulative Expenditure Report (01 January 2020- 31 December 2020)

Activities - Description	Budget in 2020 (G03)	Cumulative Expenditure			Balance as of year 2020	Delivery [%]
		2020	Pending Commitment in 2020	TOTAL		
Output 1: CBNRM institutions strengthened and financial resources mobilized for sustainable NRM	728,811.89	601,807.06	2,630.00	604,437.06	124,374.83	83%
Output 2: Waste reduced, recycled and reused through the application of circular economy model.	363,686.77	285,067.56	6,052.00	291,119.56	72,567.21	80%
Output 3: Improved access to clean, affordable, and sustainable energy for the rural poor	347,174.76	310,115.10	41,617.40	351,732.50	(4,557.74)	101%
Project management (PMC)	247,102.78	221,198.38	0	221,198.38	25,904.40	90%
Total	1,686,776.19	1,418,188.10	50,299.40	1,468,487.50	218,288.69	87%

Table 3: Cumulative Expenditure Report (01 January 2019 - 31 December 2020)

Activities - Description	Total Budget [2019-2020] G03	Cumulative Expenditure			Balance	Delivery [%]
		Gov't [Disbursed]	UNDP [Disbursed]	Total		
Output 1: CBNRM institutions strengthened and financial resources mobilized for sustainable NRM	974,210.55	496,473.47	343,893.28	840,366.75	133,843.80	86%
Output 2: Waste reduced, recycled and reused through the application of circular economy model.	648,070.61	452,690.72	100,507.73	553,198.45	94,872.16	85%
Output 3: Improved access to clean, affordable, and sustainable energy for the rural poor	556,016.08	344,859.96	152,904.30	497,764.26	58,251.82	90%
Project management (PMC)	329,920.31	211,901.84	83,338.96	295,240.80	34,679.51	89%
Total	2,508,217.55	1,505,925.99	680,644.27	2,186,570.26	321,647.29	87%

Table 4: NCSD in kind contribution report for period 01 January 2020-31 December 2020

Item	Unit	Unit Cost (US\$)	No of Unit	Number of months	Expenditure to date
Staff's Time					
Government Officer	Person-Month	400	8	12	38,400
+ DBD/GSSD					
Meng Monyrak, Deputy Secretary General	Person-Month	400	1	12	4,800
Chhin Sophea, Vice Chief Office	Person-Month	400	1	12	4,800
+DGE/GSSD					
Taing Mengeang , Director	Person-Month	400	1	12	4,800
Keo Vanthoeun, Chief Office	Person-Month	400	1	12	4,800
+DCL/GDLC					
Kung Seakly, Director	Person-Month	400	1	7	2,800
Ros Chor, Director	Person-Month	400	1	5	2,000
Meas Sothunvathanak , Chief Office	Person-Month	400	1	12	4,800
+DSWM/GDEP					
Dy Kiden, Director	Person-Month	400	1	12	4,800
Dek Vimeanreaksmey, Deputy Director	Person-Month	400	1	12	4,800
Government PMU	Person-Month	-	-	-	-
Government NPD, DNPD	Person-Month	1200	2	12	28,800
Tin Ponlok, Secretary General of NCSD and BESD Director	Person-Month	1200	1	12	14,400
Ma Chansethea, Director of DAPF and BESD Manager	Person-Month	1200	1	12	14,400
Coordination at ministry level	Person-Month	100	1	12	1,200
Office and Building/utilities					
Meeting rooms	LS-Time	400	1	12	4,800
Working space	LS-Month	1,000	1	12	12,000
Electricity and water	LS-Month	400	1	12	4,800
Grand total					\$ 90,000.00

ANNEX 1: RISK LOG

#	Description	Date Identified	Type	Impact & Probability	Countermeasures / Management response	Owner	Submitted , updated by	Last Update	Status
1	Progress of activities to be implemented by SEAC is very slow. SEAC has difficulties in appointing new board members and recruiting the required staff. If no progress achieved by end of 2019.	02 December 2019	Organizational	P=3 I=4	The contract with SEAC might need to be terminated and unused fund needs to be reimbursed.	UNDP Energy Team	Visal Veng	P=2 I=2	E-mail notification was sent to SEAC and terminated the contract
2	Impact of the COVID-19 Pandemic	March 2020	Others	P=1 I=5	Repurposed project activities that were impacted by the pandemic – activities such as study tours, workshops etc.	UNDP Energy Team	Butchaiah Gadde	P=1 I=3	Repurposed project activities that would help another village to be electrified
3	Impact of community transmission of COVID-19 in Nov	The 4 Nov event	Others	P=1 I=5	As above and conduct small groups (<20 pax) and virtual meetings	UNDP, NCSD, NCDDS and MME	PMU	P=1 I=3	Some small groups and virtual meetings were conducted

ANNEX 2: PROJECT IMPLEMENTATION ISSUES AND ACTIONS

Component	Issues	Action taken	By whom	By when
1) NRM and PES	The revised workplan against COVID-19	<ul style="list-style-type: none"> Followed up and take action in accordingly and repurposed budget and workplan was reflected in October and notified the board 	PMU/NCSD	July-Nov 2020
	PES Piloting should have more strong support from the ministerial level	<ul style="list-style-type: none"> DBD has submitted the proposed PES mechanism and fee collection options, and governance structure to the minister of environment Reparsed unimplementable fund from workshop/meetings to strategic media campaign in Kulen Host Technical Working Group (TWG) on biodiversity to seek inputs for PES roadmap, PES fund governance mechanism, and fee structure. 	Consultants and BESD project team	July-Dec 2020
	The additional tree activities requires more institutional arrangements outside the existing BESD project	<ul style="list-style-type: none"> Sought the BESD board members' endorsement of this virtually. Coordinated with newly engaged partners via other UNDP contact persons from the REDD Project. Transparently communicated with key implementing partner and mapping key implementation steps/solutions. LOA and grant agreement co-signed and extended for 2021 	PMU/NCSD Sony Oum, Sovanna Nhem, Leif Holmberg and Pinreak Sou	July-Dec 2020
2) Circular Economy	There was a delay in signing LOAs between NCSD and two departments: 1) Green Economy and 2) Solid Waste Management due to difficulties in creating bank sub-accounts and focal points for implementing the projects.	<ul style="list-style-type: none"> Conducted a series of meetings with the NCSD PMU and respective departments to speed the process. Support the PMU with inter-department LOAs 	Sony Oum and Sreykhuoch Kim and NCSD PMU	Nov-Dec 2020
	Delay in piloting municipal waste management in Kep by NCDD-S due to mainstream the plan into 3-rolling plan	<ul style="list-style-type: none"> Conducted follow-up meeting with NCDDS team and revised the workplan to reflect the reality. 	Sony Oum and Sreykhuoch Kim and NCDDS focal points	Nov 2020

Component	Issues	Action taken	By whom	By when
3) Solar Energy	Delay in the issuance of purchase order (PO) for selected vendor to implement solar DC micro-grid	<ul style="list-style-type: none"> Decoupled O&M of DC micro-grid so that PO could be issued soon 	Vuthy Va, Sarasy Chiphong (MME focal point)	June 2020
	Delay in the advertisement of ITB for second village	<ul style="list-style-type: none"> Discuss with MME to finalise second village the soonest 	Vuthy Va, Sarasy Chiphong (MME focal point)	June 2020