

2019 Project Implementation Review (PIR)



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Non-fired Brick

Basic Data	2
Overall Ratings	3
Development Progress	4
Implementation Progress	18
Critical Risk Management	20
Adjustments	21
Ratings and Overall Assessments	22
Gender	28
Social and Environmental Standards	30
Communicating Impact	32
Partnerships	34
Annex - Ratings Definitions	35

A. Basic Data

Project Information	
UNDP PIMS ID	4546
GEF ID	4801
Title	Promotion of Non-fired Brick Production and Utilization in Viet Nam
Country(ies)	Viet Nam, Viet Nam
UNDP-GEF Technical Team	Energy, Infrastructure, Transport and Technology
Project Implementing Partner	Government
Joint Agencies	(not set or not applicable)
Project Type	Full Size

Project Description

The objective of the Project is to reduce the annual growth rate of GHG emissions by displacing the use of fossil fuels and the usage of good quality soil for brick making through the increased production, sale and utilization of non-fired bricks (NFBs) in Viet Nam. This objective will be achieved by removing barriers to increased production and utilization of NFBs through 4 components: i) strengthening existing policies, guidelines, standards and codes for NFB production and usage and building the capacity of responsible government personnel to enforce a strengthened regulatory framework; ii) building the knowledge and capacity of NFB production stakeholders and potential NFB users on NFB technology application and the use of NFB projects; and iv) technical assistance in demonstrating the development of NFB production lines and the use of NFB products in new building and construction projects. The Project will be implemented over a 5-year period and is expected to generate GHG emission reductions through the displacement of coal-fired clay brick kilns. Direct GHG reduction estimates are 383 ktonnes CO2. Indirect emission reductions are 13,409 ktonnes CO2 that is cumulative for a 10-year period after the end of the Project.

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Other Partners	Mr. Bac Pham (pvb081062@yahoo.com)				

B. Overall Ratings

Overall DO Rating	Satisfactory
Overall IP Rating	Moderately Satisfactory
Overall Risk Rating	Moderate

C. Development Progress

Description

Objective

Reduce the annual growth rate of GHG emissions by displacement of fossil fuel use and the usage of good quality soil for brick making through the increased production, sale and utilization of non-fired bricks (NFBs) in Viet Nam

Description of Indicator	Baseline Level	Midterm target level	End of project target level	Level at 30 June 2018	Cumulative progress since project start
Cumulative direct and direct post- project CO2 emission reductions resulting from the NFB plant investments and technical assistance by EOP, Mtons CO2. (Per MTR, the text of this indicator was slightly revised to "Cumulative direct project and post-project CO2 emission" to improve the definition)	clarity, replacing the original "0" with text.) No NFB production lines	(not set or not applicable)	0.088 (This is the direct emission reduction during the course of the 5- year Project.) 1.270 (This is the direct post-project emission reduction from NFB plants that received technical assistance from Project Output 4.9 during Years 4 and 5 to be implemented after EOP.)		 0.180955 (direct emission reduction) The value is calculated based on difference between CO2 emission reduction resulting from the total NFBs outputs produced by 4 demo projects + 18 replication projects as compared to the CO2 emission reduction of the same number of FCBs outputs (higher results as compared to previous are caused by counting in the NFBs produced by 18 replication projects). 1.332 (direct post-project emission reduction) The direct post project CO2 is calculated based on the cumulative NFB SBUs produced by 4 demo projects and 18 replication projects for 10 years period during 2020-2030

Cumulative direct energy saving (TOE) from displacement of coal through the demonstration NFB plants (3 CBB plants and one AAC plant and 21 replication projects during the project time) by EOP (Per MTR, additional text "and 21 replication project during the project time" was added to improve the definition)	0 (Per the MTR, the baseline was revised for clarity, replacing the original "0" with text.) No NFB production lines in operation using modern technology No energy savings through replacement of CFBs through modern NFBs	(not set or not applicable)	30782	14,608 Over target 2018 10,261	36,560 The value is calculated based on difference between energy saving resulting from the total NFBs outputs produced by 4 demo projects + 18 replication projects in and the energy saving of the same number of FCBs outputs
The progress of the objective ca Outcome 1 Approval and enforcement of an		Achieved	NFB production and	l use, and enhanced govern	ment capacity and knowledge to regulate
NFB development and usage Description of Indicator	Baseline Level	Midterm target level	End of project target level	Level at 30 June 2018	Cumulative progress since project start
Number of policies, regulations and standards approved and enforced to encourage the increase in the production and usage of NFBs and decrease the	0 (Per the MTR, the baseline was revised for clarity, replacing the original "0" with text.)	(not set or not applicable)	10 Per the MTR, the target was revised to	14 Target for year 3 is 6	15 policies including Decrees, Circular, National Decisions and provincial directive to promote the production and use of NFB and decrease FCB
use of FCBs (Per the MTR, the indicator was slightly revised to improve the definition)	A number of plans/policies have been adopted to		13 additional policies approved	1	During the reporting period, 1 policy was developed: the draft Circular on

	building materials by 2020; (ii) Decision No. 567/2010/QD-TTg; (iii) Directive No. 10/CT-TTg (2012) on promotion of NFB production and utilization: (iv) circular 09/2012/TT-BXD creating NFB demand; (v) decision No. 1449/QD-TTg for retirement of traditional claps kilns. Lack of standards and policies on NFB equipment to encourage and attract local enterprises to invest in NFB production lines Insufficient NFB standards make it difficult to control quality of NFB produced, quality of buildings where NFBs are used		development (Investment, production and use) and decrease FCB usage by EOP 2 standards / policies approved to promote local manufacturers of NFB equipment and technology by year 4 3 standards/ regulations approved by year 3 to govern quality of NFBs		 was submitted to the Ministry of Construction for approval. 2 standards / policies approved to promote local manufacturers: 1 circular issued by MPI to remove incentive for imported NFB equipment for production line of less than 20 million SBUs thus to promote the local production of NFB equipment 1 standard on NFB mould was developed with support by the project in (A standard of Non-fired Brick mould was approved and announced by THANH PHUC Company) 3 national standards (TCVN) on NFB (concrete bricks) were adopted by MOST in 2017 In addition, draft versions of other (03) national standards (TCVN) on NFB panel are evaluated and assessed by Viet Nam Concrete Association and will be submitted to MOC and MOST in September for approval
Number of officially approved and enforced regulatory framework mandating the replacement of fired clay brick kilns by Year 2	0	(not set or not applicable)	1 (This will include a market analysis of fired kilns and VSBKs in operation, a timeframe over which these kilns can be retired, the	This indicator is no longer tracked.	(not set or not applicable) This indicator is no longer tracked, in line with the MTR

(This indicator was deleted at the inception phase since the framework has been already in place)			setup of a cell within a government agency to assist FCB entrepreneurs in their transition to NFB technology voltage grid, references to NFB product testing procedures and directives to monitor, report and verify energy intensities of NFB production)		
Number of policies and standards developed for the local manufacture of NFB equipment and technology that are approved and enforced by Year 4 (This indicator will no longer be tracked, in line with the MTR)	0	(not set or not applicable)	3	This indicator is merged with the earlier indicator "Number of policies, regulations and standards approved and enforced to encourage the increase in the production and usage of NFBs and decrease the use of FCBs", in line with the MTR.	(not set or not applicable) This indicator is no longer tracked, in line with the MTR
Number of developed regulations, building standards and codes governing the use of NFBs in the construction sector that are approved and enforced by Year 3 (This indicator will no longer be tracked, in line with the MTR)	1	(not set or not applicable)	3	This indicator will no longer be tracked, in line with the MTR.	(not set or not applicable) This indicator is no longer tracked, in line with the MTR

Number of standards/norms on energy efficiency (EE) and emissions reduction in NFB production developed	0 (Per the MTR, the baseline was revised for clarity, replacing the original "0" with text.)	(not set or not applicable)	2 standards / norms on energy efficiency and emission reduction in NFBs production adopted by EOP		2 norms on energy consumption and GHG emission for NFB are finalised.
(Per the MTR, the indicator was slightly revised to improve the definition)	No standard / norms have been adopted for EE and emission reduction for production of construction of construction materials as well as NFBs		(Per the MTR, description was added to the number for clarity)		
Number of trained government officers in NFB quality control standards and regulations and new building codes mandating the use of NFBs by EOP	0 (Per the MTR, the baseline was revised for clarity, replacing the original "0" with text.)	(not set or not applicable)	officers trained in	Over target year 3 (100)	1,000 government officers at national and provincial level trained on policies and standards, legal framework, regulating the production and use of NFB, NFB technologies, investment in NFB production lines, etc. in 2017 and
Per the MTR, the indicator was revised to	Limited capacity of the government officers in NFBs in general, quality control of NFB manufacturing, production		Per the MTR, the target was revised to		2018.
Enhanced government capacity to improve NFB regulation, control and mandate NFBs production and markets	and uses in particular No training courses have been held to enhance capacity of the government officers in NFB development and management		By EOP, 940 government officers at national and provincial level trained on various aspects of NFBs (types, characteristics, requirement for control and promotion of NFB manufacturing, production		

			technology, usage, etc.)		
Number of NFB plants that are compliant to new NFB quality control regulations and standards by EOP (This indicator will no longer be tracked, in line with the MTR)	0	(not set or not applicable)	6	This indicator will no longer be tracked, in line with the MTR.	(not set or not applicable) This indicator is no longer tracked, in line with the MTR
Number of building projects that are using new building codes that define and mandate the use of NFBs by EOP (This indicator will no longer be tracked, in line with the MTR)	0	(not set or not applicable)	6	This indicator will no longer be tracked, in line with the MTR.	(not set or not applicable) This indicator is no longer tracked, in line with the MTR
The progress of the objective ca	in be described as:	Achieved			
Outcome 2 Increased availability of technica	ally skilled and qualified I	ocal service prov	iders for NFB plant	s, and enhanced stakeholder k	nowledge on NFB usage.
	ally skilled and qualified I Baseline Level	ocal service prov Midterm target level	iders for NFB plant End of project target level	s, and enhanced stakeholder k Level at 30 June 2018	nowledge on NFB usage. Cumulative progress since project start
Increased availability of technica Description of Indicator	Baseline Level	Midterm target	End of project		Cumulative progress since project

	Lack of local technical knowledge on how to manufacture equipment for NFB production lines that can be competed with those internationally produced (quality and price)		this project by year 4 (Per the MTR, description was added to the number for clarity)		
and owners used NFBs as building construction material by EOP	0 (Per the MTR, the baseline was revised for clarity, replacing the original "0" with text.) Lack consumer confidence and knowledge on using NFB	(not set or not applicable)	300 building developers and owners correctly use NFBs as building construction material by EOP (Per the MTR, description was added to the number for clarity)	1,536 Target for year 3 is 100	2,115 Number of buildings that use NFBs. Data was formally provided by Department of Construction in 20 provinces on the buildings that used NFBs
Number of visitors to NFB website and facilitation center at VABM by EOP (Per the MTR, this indicator has been replaced with the new indicator "Enhanced technical skills and stakeholder knowledge". See the MTR for more detail.)	0	(not set or not applicable)	1000	This indicator has been replaced and will no longer be tracked, in line with the MTR.	(not set or not applicable) This indicator is no longer tracked, in line with the MTR

2019 Project Implementation Report

Enhanced technical skills and	No training has been	(not set or not	By EOP, 21	24 training courses	23 training courses conducted in 2017-
stakeholder knowledge/	•	applicable)	training courses	5	2018 with total of over 1,680 people
information on NFB associated	regarding NFB associated	•• •	with total of 1500		from 63 provinces who were trained on
issues	issues;		people from 50	In 2017, the project conducted 21	various NFBs' aspects focusing on 5
	,		provinces trained	training courses with total of over	
			on various NFBs'	1,600 people from 63 provinces	
(Per the MTR, this new indicator	Limited NFB knowledge		aspects. Of these:	trained on various NFBs'	Of these:
has been added, replacing the old	5			aspects.	- 1000 governmental and local
indicator "Number of visitors to	designers and building		• 940	aspecis.	officers
	developers;		governmental and		oncers
	developers,		local officers		- 130 designers and constructors
center")			404	Of these:	
			• 121	1000 governmental and	- 422 NFB investors
	Little or no knowledge		designers and	- 1000 governmental and	400 meaning from other valated
	amongst construction		constructors	local officers	- 128 people from other related
	workers on NFB building		• 399 NFB	- 130 designers and	areas
	techniques and best		investors	constructors	5 key training areas are:
	practices on using NFBs				
	in construction;		40 people	 422 NFB investors 	-Module 1: Introduction (basic
			from other related		knowledge) of NFB, policy and
			areas	- 40 people from other	standards; Module 2: Design and
	Low awareness on the			related areas	Construction of buildings using NFB;
	advantages and				Module 3: Production technology of
	environmental benefits of		2 training courses		Autoclaved aerated concrete (AAC);
	NFBs within the		for 60 people from		Module 4: Production technology of
					concrete block brick (CBB); and Module
	construction and building		vocational colleges		5: Investment planning and capital loan
	sector in Viet Nam		of construction		applications for NFB project
			A NFB website		
			developed,		2 training workshops:
			maintained and		No training is provided to the vocational
			updated regularly		construction colleges since these
					colleges no longer provide training to
					construction workers. Instead, the
					project conducted 2 training workshops
					for 10 construction workers and 10
					supervisors as part of activities to
					supervisors as part of activities to

					develop training documents and demonstrate the use of NFBs in construction work. A website page is available at http://en.duangachkhongnung.vn/ hosted by VABM (Vietnam Association of Building Materials)
The progress of the objective ca	n be described as:	Achieved			· · ·
Outcome 3 Improved availability and sustair Description of Indicator					
	Baseline Level	Midterm target level	End of project target level	Level at 30 June 2018	Cumulative progress since project start
	0	-		24 (over target EOP)	

	No dedicated financing for NFB production				
Number of SMEs and NFB entrepreneurs with confirmed financing (Per the MTR, this indicator was slightly revised to improve the definition)	0 (Per the MTR, the baseline was revised for clarity, replacing the original "0" with text.) Many potential NFB investors are SMEs who have difficulties in accessing to loans, Lack of knowledge and ability of potential SME investors to apply for concessionary financing of NFB project		10 Per the MTR, the target was revised to 30 NFB SMEs get loans from financial institutions by EOP (10 NFB projects get loan from VEPF and 20 projects get loans from VietinBank)		33 13 NFB enterprises got concessional loans from VEPF 20 NFB enterprise got loans from Vietinbank
The progress of the objective can be described as:		Achieved			
Outcome 4 Boosted confidence in NFB teo Description of Indicator	hnology application result Baseline Level	Midterm target	End of project	NFBs Level at 30 June 2018	Cumulative progress since project
		level	target level		start
Number of NFB demonstration plants in operation	0 (Per the MTR, the baseline was revised for clarity, replacing the original "0" with text.)	(not set or not applicable)	3 CBB demonstration plants operating at 90% designed capacity by EOP, with cumulative	3 0	3 CBB demonstration project operating at 70% of design capacity, with cumulative annual production of 87.5 million SBUs

	As of 2015 there exist (i) more than 1,000 CBB production lines (with yearly production of 6 million SBUs);		of 65 million SBUs by EOP; 1 AAC		The operational capacity is lower, due to the greater increase of NFB production compared to the smaller increase in the NFB demand
	(ii) 12 AAC companies (with yearly production of about 1.3 million SBUs); and		demonstration plant operating at 90% designed capacity by EOP		1 AAC demonstration plan operating at 74% design capacity and production output of 71 million SBUs.
	 (iii) 17 foamed brick companies (with yearly production of 0.12 billion SBUs). Most of CBB technologies imported from China are low quality; 		(Per the MTR, the target was updated)		The plant has increased the designed production capacity from 100,000m3 to 200,000 m3 since November 2018, with technical support by the project in improved EE, production efficiency and optimal mix of inputs materials.
	• NFB entrepreneurs lack knowledge on the production of qualified NFBs, lack of knowledge in designing, constructing, operating and maintaining an NFB plant;				
	• Very few examples of well- managed and profitable NFB production facilities existed				
Number of AAC facilities with production at a 90% capacity factor by Year 3 (This indicator will	0	(not set or not applicable)	1	This indicator is merged with the earlier indicator Number of NFB	(not set or not applicable) This indicator is no longer tracked, in line with the MTR

no longer be tracked, in line with the MTR)				demonstration plants in operation", in line with the MTR.	
Cumulative annual production of NFBs from 3 NFB demonstration plants in Vietnam by EOP (SBUs) (This indicator will no longer be tracked, in line with the MTR)	0	(not set or not applicable)	65 million	This indicator has been replaced and will no longer be tracked, in line with the MTR.	(not set or not applicable) This indicator is no longer tracked, in line with the MTR
MJ/standard brick unit (energy intensity) of CBB manufacture from demonstration NFB plants by EOP (This indicator will no longer be tracked, in line with the MTR)	3.554	(not set or not applicable)	0.455 (hollow bricks) 0.675 (solid bricks)	This indicator has been replaced and will no longer be tracked, in line with the MTR.	(not set or not applicable) This indicator is no longer tracked, in line with the MTR
MJ/standard brick unit (energy intensity) of AAC bricks by EOP (This indicator will no longer be tracked, in line with the MTR)	3.554	(not set or not applicable)	1.284	This indicator has been replaced and will no longer be tracked, in line with the MTR.	(not set or not applicable) This indicator is no longer tracked, in line with the MTR
Number of NFB plants with feasibility studies completed with assistance of VABM-associated consultants by EOP	0 Per the MTR, the baseline was updated to	(not set or not applicable)	24 (This assumes an average production rate of 20 million SBUs per CBB plant, and	10 Target for year 3 is 6.	18 Target for EOP is 22 Support to other 4 NFB factories is on-
Per the MTR, this indicator was merged with the below indicator "Number of NFB plants that are planned by EOP" and revised to	Lack of local technical knowledge on planning, designing, constructing, operating and maintaining an NFB plant		100 million SBUs per AAC plant. GHG reductions from these potential projects will be counted as direct post-project	32 Target for year 3 is 10.	going and will be completed soon. 18 NFB enterprises received technical support in key areas including: development of feasibility assessment for the establishment of new production line; preparation of loan application for
Number of NFB plants received technical assistance on optimization of raw materials, product quality control procedures, staff training and			emissions.) Per the MTR, the target was updated to		loan by VEPF; setting up effective production procedure and quality control procedure, optimal mix of raw materials; using solar energy for NFB curing, etc

technology transfer feasibility					
technology transfer, feasibility studies planned and operated			With the project support, it's expected by EOP: • 21 NFB plants received direct support in development of feasibility studies, optimization of inputs materials, production management, quality control, etc. and operated; • 50 NFB plants with approved investment plan		For ongoing support to 4 replication projects: 3 replication projects in Duc Thuy Ltd Co, in Thai Binh; Thinh Dat Joint-stock Co, in Hai Duong; and Tan Ky Tri Ton NFB company in An Giang provinces: Support to establish new NFB production lines: feasibility studies for investment in new NFB production lines completed. Ongoing work: equipment installation. Pending work: development of production procedure and training provided to workers and final monitoring report. Puzoland NFB Plant in Son Tay: Technical support in terms of development of optimal raw material mix. Ongoing work: setting up production procedure and quality control procedure, staff training and technology transfer; monitoring and evaluation report 53 new NFB production lines of which investment plans were approved
Number of NFB plants that are planned by EOP (Per the MTR, this indicator was merged with the above indicator "Number of NFB plants with Feasibility Studies completed")	0	applicable)	50 (This includes entrepreneurs who have expressed interest to VABM to develop an NFB plant but who will	N/A	(not set or not applicable)

			not have completed a feasibility study during the Project; as such, the GHGs from these developments will be counted as indirect (bottom up replication))		
% of market share of NFBs in the local brick market	i i	(not set or not applicable)	25 % of the NFB market share in the local brick markets by EOP (Per the MTR, description was added to the number for clarity)	18% Target for year 3 is 13%.	28.5% Based on the survey done by the project. The survey covered the installed production capacity, actual production outputs, and consumption of both NFB and FCB of 63 provinces. Data was provided by the Departments of Construction of 63 on annual basis during 2016-2020. The market share of NFBs (28.5%) is calculated based on the consumption of NFB against the total consumption bricks estimated for 2019.

D. Implementation Progress



Highcharts.com

Cumulative GL delivery against total approved amount (in prodoc):	76.12%
Cumulative GL delivery against expected delivery as of this year:	76.12%
Cumulative disbursement as of 30 June (note: amount to be updated in late August):	2,131,340

Key Financing Amounts				
PPG Amount	95,000			
GEF Grant Amount	2,800,000			
Co-financing	32,200,000			

Key Project Dates			
PIF Approval Date	Jun 7, 2012		
CEO Endorsement Date	Mar 11, 2014		
Project Document Signature Date (project start date):	Nov 4, 2014		
Date of Inception Workshop	May 29, 2015		
Expected Date of Mid-term Review	May 4, 2017		

Actual Date of Mid-term Review	Jul 17, 2018
Expected Date of Terminal Evaluation	Aug 4, 2019
Original Planned Closing Date	Nov 4, 2019
Revised Planned Closing Date	(not set or not applicable)

Dates of Project Steering Committee/Board Meetings during reporting period (30 June 2018 to 1 July 2019)

2019-01-18

E. Critical Risk Management

Current Types of Critical Risks	Critical risk management measures undertaken this reporting period
Other	Others (Market risk)
	The market share for NFBs may be below its potential due to the risk that the consumer has low confidence in and inadequate knowledge on NFB.
	Mitigation: An integrated market development strategy has been developed that will cover various gaps such as product quality certification, better monitoring and more stringent enforcement of policies, policies and guidelines on NFB usage, and more training and awareness raising. Action has to be taken both on the demand side (policies, standards, enforcement, compliance, training on NFB usage), and the supply side (on enforcement, compliance and training and awareness raising with NFB product and production standards and on FCB phase-out. The project will continue to address these mentioned challenges through following actions:
	+ develop a strategy for market development of NFB
	+ advocate and support the implementation of MOC regulation No 13 using non-fired brick products through training course and workshop.
	 + cooperate with Department of construction in provinces to conduct workshop to raise awareness of the use of non-fired bricks.
	+ provide technical assistance to NFB producing companies to get Non-Fired Brick product quality certificate.
	 produce communication materials for dissemination including video and Leaflet on benefit and superiority of non-fired brick product, etc.

F. Adjustments

Comments on delays in key project milestones

Project Manager: please provide comments on delays this reporting period in achieving any of the following key project milestones: inception workshop, mid-term review, terminal evaluation and/or project closure. If there are no delays please indicate not applicable.

While the planned project closure date is November 4th 2019, the project closing date might need to be extended to tentatively April 30, 2020 due to following reasons:

- Delay during the inception phase at the start of the project. Inception Workshop was conducted in May 29th, 2015, 6 months after the commencement of the project.

- More time will be needed for completion of remaining activities particularly i) completion of 3 replication projects; ii) development of a national level intergrated product-market strategy for Non-fired bricks in Viet Nam; iii) Assessment of result and impact of non-fired bricks demonstration, replication projects and finance assistance and operational and financial closusre of the project

Country Office: please provide comments on delays this reporting period in achieving any of the following key project milestones: inception workshop, mid-term review, terminal evaluation and/or project closure. If there are no delays please indicate not applicable.

It is likely that the project closure date will be extended due to delays in implementation and completion of technical support provided to 4 remaining NFB enterprises. Completion of project communication activities and documentation of project products might also need more time to be completed beyond the project closure date. In addition, the project also needs at least 3 months for financial closure after the planned closing date.

UNDP-GEF Technical Adviser: please provide comments on delays this reporting period in achieving any of the following key project milestones: inception workshop, mid-term review, terminal evaluation and/or project closure. If there are no delays please indicate not applicable.

The project phase some delay at the project start up phase, which may mean that implementation time for completion of the project is just a few months short. If the project will want to extend the project implementation, it will have to go through the extension request process which means that it will need strong justification in order for extension request to be granted.

G. Ratings and Overall Assessments

Role	2019 Development Objective Progress Rating	2019 Implementation Progress Rating	
Project Manager/Coordinator	Highly Satisfactory	- IP Rating provided by UNDP-GEF Technical Adviser and UNDP Country Office only -	
Overall Assessment		tation, the project has achieved almost all ive indicators and 11 indicators are over	
		to implementation of objective of Non-fired by Government with Market share that % in 2019.	
	Following are the main results that w development results during the repo		
	Component 1: Policy support for nor	n-fired brick (NFB) technology development	
	- Draft versions of (03) nation evaluated and assessed by Viet Nar submitted to MOC and MOST in Sep		
	- 2 norms of energy consump finalised.	tion and GHG emission for NFB are	
	- The drafted Circular on processing, utilization of fly ash, botton and gypsum for making building materials and in building construction submitted to the Ministry of Construction for approval.		
	- A standard of Non-fired Bric THANH PHUC Company.	k mould was approved and announced by	
	Component 2: Technical capacity bu operation and use of NFB product	uilding on NFB technology application and	
	and structure" developed by the proj	Technology for Non-fired building material ect was evaluated and accepted by Engineering as an official training manual.	
	 A package of 5 training manuals were prepared and published. T manuals focus on 5 topics including Module 1: Introduction (basic knowl of NFB, policy and standards; Module 2: Design and Construction of build using NFB; Module 3: Production technology of Autoclaved airated concr (AAC); Module 4: Production technology of concrete block brick (CBB); a Module 5: Investment planning and capital loan applications for NFB proj Two training workshops for vocational construction schools were conducted due to the fact that these schools are no longer providing train to construction workers. Instead, the project provided two training course using 2 lectures for construction workers and supervisors on the use of N 		
	Component 3: Sustainable financing support for NFB technology applica - With support by the project over the past 4 years and support by Vietinbank, loan volume provided by financial institutions (including com banks) for NFB investments is USD24.6 million for 33 enterprises.		

	Component 4: NFB technology application, investment and replication		
	- Completed support to an AAC plant/ Viglacera with improved production efficiency and energy efficiency. Support was provided to Viglacera to implement 03 measures including: i) to improve Energy Management (design, procurement, installation and operation); to determine the optimal mix proportions for AAC block with recommended optimum technological parameters of the autoclave process for each type of AAC product; to complete AAC block pilot production with optimal mix proportion and tested trial product quality.		
	prepare investment report, feasibility re using manganese slag in NFB producti	on, using solar energy for curing NFBs of 18 companies that received technical	
	- A package of communication activities was implemented to raise awareness on the good quality as well as benefits of NFBs and technical solutions to improve the NFB quality		
	- 22,000 leaflets and posters on benefits of using NFBs printed and disseminated to 63 provinces, districts, NFB and construction enterprises, construction managers.		
	 15 thematic articles on 6 e-newspapers/newspapers covering Potential for NFB development, technology innovation for NFB development, NFB development orientation to green development, enterprises difficult accessing to financing sources, etc.); 16 posts/news about project's activities on e-newspapers/ newspapers (13 in Vietnamese and 03 in English); 01 news about project's activities and 01 featured reports on VOV channel on benefit from NFB; one video finalized on NFB introduction as green building material; Website operation @ Duangachkhongnung.vn) with hundreds of articles and news on NFB development updated and published. 		
Role	2019 Development Objective Progress Rating	2019 Implementation Progress Rating	
UNDP Country Office Programme Officer	Satisfactory	Satisfactory	
Overall Assessment	During the 4th year of project implementation, the project demonstrates continued good progress toward development objectives. Out of 17 indicators for development objective, 15 indicators are achieved or over the targets. There are two remaining targets on "direct post-project emission reduction from NFB plants that received technical assistance from project" and "number of replication projects that receive support by the project" are on track to achieve the respective end of project targets by the project closure.		
	Outcome 1 on improved policy framework and enforcement of the production and use of NFB: the project has extended support to MOC to develop 03 standards on non-fired panel and the circular on utilization of fly ash, bottom ash and gypsum for making building materials. In addition, a standard on mould for making NFB is developed and announced by an equipment manufacturer as an effort to improve the local production of NFB equipment.		

Other Partners	(not set or not applicable)	- IP Rating provided by UNDP-GEF Technical Adviser and UNDP Country Office only -	
Overall Assessment	(not set or not applicable)	(not set or not applicable)	
Role	2019 Development Objective Progress Rating	2019 Implementation Progress Rating	
UNDP-GEF Technical Adviser	Highly Satisfactory	Moderately Satisfactory	
Overall Assessment	to go before project closure. At thi indicators and has shown impress benefits with direct emission reduc	mplementation with only a few more months is point, the project is exceeding nearly all sive results in achieving global environmental ctions being 3 times higher than the End of med appropriate to rate the Development Satisfactory.	
	38% delivery rate of the annual we implementation, it seems challeng project end date of 4th November	With only a few more months to go and an overall delivery rate of 77% and 38% delivery rate of the annual workplan budget after 6 months of implementation, it seems challenging to realise 100% delivery before the project end date of 4th November '19. The Implementation Progress is therefore rated as Moderately Satisfactory.	
	DEVELOPMENT OBJECTIVE RA	DEVELOPMENT OBJECTIVE RATING	
	seen that the project has delivered more or less all indicators. Most re- one of the key global environment indicates results that tripled the ex- the Non-Fired Brick (NFB) sector I becoming one of the mainstream by a market share of 28.5% of NF expected 18% market share by the benefited from a very good timing strengthen this sector, where the p helped the sector to achieve mature standards, capacity building, finan has thereby also shown to be a go whereby the Ministry of Science a Ministry of Construction (MoC) has	With the project being in its final stages of implementation, it can now clearly be seen that the project has delivered very good results with over-achievement for more or less all indicators. Most remarkably, the direct emission reduction – one of the key global environmental benefits that this project is aiming for – indicates results that tripled the expected end of project target. This shows that the Non-Fired Brick (NFB) sector has seriously taken off and is at the point of becoming one of the mainstream options in the sector. This is also evidenced by a market share of 28.5% of NFBs in the local brick market, far exceeding the expected 18% market share by the end of the project. The project has thereby benefited from a very good timing, with strong support from the government to strengthen this sector, where the project has proven to be the catalyst that helped the sector to achieve maturity by means of a combination of policy, standards, capacity building, finance and demonstration projects. The project has thereby also shown to be a good example of inter-ministerial collaboration whereby the Ministry of Science and Technology (MoST) as well as the Ministry of Construction (MoC) have shown to be able to create synergy in implementation of different project components.	
	of 14 policies including Decrees, C directive to promote the production Brick (FCB). During the reporting processing, utilization of fly ash, b materials and in building construct for approval). In addition, the proje- manufacturers (e.g. removing ince-	ad already achieved an impressive number Circular, National Decisions and provincial n and use of NFB and decrease Fired Clay period, another Circular was developed on ottom-ash and gypsum for making building tion (submitted to the Ministry of Construction ect developed 2 standards to promote local entives for imported NFB equipment and a standards to govern quality of NFBs were	

adopted by MOST in 2017 and 3 more draft versions of national standards (TCVN) on NFB panel are evaluated and assessed by Viet Nam Concrete Association and will be submitted to MOC and MOST in September '19 for approval. This means the project has more than succeeded in strengthening of MoST and MoC standards to implement and regulate the growth of NFB production and usage.

Under Component 2, several capacity building and technical training activities have taken place, with 1,680 people from 63 provinces trained, some 200 people more than the end of project target. At the same time strategic partnerships have been set up between e.g. Vietnam Association for Building Materials (VABM) and local NFB manufacturers, suppliers, and local service providers while the project also supported a local firm that can manufacture NFB plant equipment based on set standards developed under this project, the Thanh Phuc NFB company.

Component 3 has gone through a revision during the MTR as it turned out that commercial loans had become available and regular commercial investments increased much faster than expected, greatly reducing the need for publicly funded loans. The newly introduced indicator, U\$24 million provided by financial institutions for NFB production, was exceeded in that US\$ 26.45 million was provided in loan finance by VEPF and Vietinbank for NFB investments for 33 enterprises.

Under Component 4, whereas in previous project visits to Vietnam and during the MTR there was still discussions about whether there would be sufficient demand for NFBs, this concern has proven to be unnecessary, as the market share of NFBs in the local brick market surveyed resulted in 28.5%, far exceeding the expected 18% market share by the end of the project.

These observations reflect the success of the project as a result of the joint efforts of all parties involved: the Ministry of Construction as the main driver behind the construction sector, the Ministry of Science and Technology as implementing partner and main driver for technology development, involved stakeholders who have taken an active role in preparing the market for non-fired bricks and the PMU who steered the project effectively in a rapidly changing environment. Given the results and the higher contribution to the global environmental benefits than expected, the Development Objective of the project is rated as Highly Satisfactory.

IMPLEMENTATION PROGRESS RATING

With only a few more months to go and an overall delivery rate of 77% and 38% delivery rate of the annual workplan budget after 6 months of implementation, it seems challenging to realise 100% delivery before the project end date of 4th November '19. The project will have to put dedicated efforts in finalizing its project activities in time while ensuring it meets its Annual Workplan commitment. Strict planning of project activities and supervision of results may be needed to finalise the project within the expectations of the

Annual Workplan. The Implementation Progress of the project is therefore rated as Moderately Satisfactory.
RECOMMENDATIONS
The project team is advised to quickly start the process of starting the Terminal Evaluation of the project where the TE may want to focus on the lessons learned that can be used to replicate the success of the project to be able to use these in development of future work.

H. Gender

Progress in Advancing Gender Equality and Women's Empowerment

This information is used in the UNDP-GEF Annual Performance Report, UNDP-GEF Annual Gender Report, reporting to the UNDP Gender Steering and Implementation Committee and for other internal and external communications and learning. The Project Manager and/or Project Gender Officer should complete this section with support from the UNDP Country Office.

Gender Analysis and Action Plan: not available

Please review the project's Gender Analysis and Action Plan. If the document is not attached or an updated Gender Analysis and/or Gender Action Plan is available please upload the document below or send to the Regional Programme Associate to upload in PIMS+. Please note that all projects approved since 1 July 2014 are required to carry out a gender analysis and all projects approved since 1 July 2018 are required to have a gender analysis and action plan.

(not set or not applicable)

Please indicate in which results areas the project is contributing to gender equality (you may select more than one results area, or select not applicable):

Contributing to closing gender gaps in access to and control over resources: No

Improving the participation and decision-making of women in natural resource governance: No

Targeting socio-economic benefits and services for women: No

Not applicable: Yes

Atlas Gender Marker Rating

GEN1: some contribution to gender equality

Please describe any experiences or linkages (direct or indirect) between project activities and gender-based violence (GBV). This information is for UNDP use only and will not be shared with GEF Secretariat.

(not set or not applicable)

Please specify results achieved this reporting period that focus on increasing gender equality and the empowerment of women.

Please explain how the results reported addressed the different needs of men or women, changed norms, values, and power structures, and/or contributed to transforming or challenging gender inequalities and discrimination.

(not set or not applicable)

Please describe how work to advance gender equality and women's empowerment enhanced the project's environmental and/or resilience outcomes.

(not set or not applicable)

I. Social and Environmental Standards

Social and Environmental Standards (Safeguards)

The Project Manager and/or the project's Safeguards Officer should complete this section of the PIR with support from the UNDP Country Office. The UNDP-GEF RTA should review to ensure it is complete and accurate.

1) Have any new social and/or environmental risks been identified during project implementation?

No

If any new social and/or environmental risks have been identified during project implementation please describe the new risk(s) and the response to it.

(not set or not applicable)

2) Have any existing social and/or environmental risks been escalated during the reporting period? For example, when a low risk increased to moderate, or a moderate risk increased to high.

No

If any existing social and/or environmental risks have been escalated during implementation please describe the change(s) and the response to it.

(not set or not applicable)

SESP: not available

Environmental and Social Management Plan/Framework: not available

For reference, please find below the project's safeguards screening (Social and Environmental Screening Procedure (SESP) or the old ESSP tool); management plans (if any); and its SESP categorization above. Please note that the SESP categorization might have been corrected during a centralized review.

(not set or not applicable)

3) Have any required social and environmental assessments and/or management plans been prepared in the reporting period? For example, an updated Stakeholder Engagement Plan, Environmental and Social Impact Assessment (ESIA) or Indigenous Peoples Plan.

Not Applicable

If yes, please upload the document(s) above. If no, please explain when the required documents will be prepared.

(not set or not applicable)

4) Has the project received complaints related to social and/or environmental impacts (actual or potential)?

No

If yes, please describe the complaint(s) or grievance(s) in detail including the status, significance, who was involved and what action was taken.

(not set or not applicable)

J. Communicating Impact

Tell us the story of the project focusing on how the project has helped to improve people's lives.

(This text will be used for UNDP corporate communications, the UNDP-GEF website, and/or other internal and external knowledge and learning efforts.)

(not set or not applicable)

Knowledge Management, Project Links and Social Media

Please describe knowledge activities / products as outlined in knowledge management approved at CEO Endorsement /Approval.

Please also include: project's website, project page on the UNDP website, blogs, photos stories (e.g. Exposure), Facebook, Twitter, Flickr, YouTube, as well as hyperlinks to any media coverage of the project, for example, stories written by an outside source. Please upload any supporting files, including photos, videos, stories, and other documents using the 'file lirbary' button in the top right of the PIR.

Project website: http://en.duangachkhongnung.vn//chuyenmuc/project-1077.html

Link to video clip on the benefits of NFB: https://drive.google.com/file/d/1YMs-PM1K1uz3Fx2DRqjZK6q9CY4BRmN/view?usp=drive_web

List of news on activities supported by the project

http://en.duangachkhongnung.vn//Default.aspx

https://www.most.gov.vn/en/news/666/project-steering-committee-meeting-on-promotion-of-nonfired-bricks-production-and-utilization-in-vietnam.aspx

http://en.hoivlxdvn.org.vn//news/encouraging-the-development-manufacture-and-use-of-non-firedbrick-production-equipment-61567.html

List of news on NFB Project (news and information is in Vietnamese)

http://www.baoxaydung.com.vn/news/vn/vat-lieu/co-che-chinh-sach-thuc-day-phat-trien-gach-khongnung.html

https://vatlieuxaydung.org.vn/tin-tuc/su-kien/tang-cuong-co-che-chinh-sach-thuc-day-phat-trien-gachkhong-nung-9443.htm

https://baotintuc.vn/van-de-quan-tam/can-chinh-sach-manh-hon-de-thuc-day-su-dung-gach-khongnung-20170630135756779.htm

http://italvina.com/vi/tin-tuc/tang-cuong-co-che-chinh-sach-thuc-day-phat-trien-gach-khong-nung-23.html

https://baomoi.com/xay-dung-chinh-sach-va-tieu-chuan-khuyen-khich-che-tao-thiet-bi-gach-khongnung/c/25361373.epi

http://hoivlxdvn.org.vn/news/hoi-thao-vat-lieu-xay-dung-moi-xanh-sach-tiet-kiem-nang-luong-61595.html

K. Partnerships

Partnerships & Stakeholder Engagment

Please select yes or no whether the project is working with any of the following partners. Please also provide an update on stakeholder engagement. This information is used by the GEF and UNDP for reporting and is therefore very important! All sections must be completed by the Project Manager and reviewed by the CO and RTA.

No

Does the project work with any Indigenous Peoples?

No

Does the project work with the Private Sector?

Yes

Does the project work with the GEF Small Grants Programme?

No

Does the project work with UN Volunteers?

No

Did the project support South-South Cooperation and/or Triangular Cooperation efforts in the reporting year?

No

CEO Endorsement Request: <u>RESUBMISSION_PIMS 4546 VN NFB CEO Endorsement Request -</u> 06Feb14.docx

Provide an update on progress, challenges and outcomes related to stakeholder engagement based on the description of the Stakeholder Engagement Plan as documented at CEO endorsement/approval (see document below). If any surveys have been conducted please upload all survey documents to the PIR file library.

N/A

L. Annex - Ratings Definitions

Development Objective Progress Ratings Definitions

(HS) Highly Satisfactory: Project is on track to exceed its end-of-project targets, and is likely to achieve transformational change by project closure. The project can be presented as 'outstanding practice'.

(S) Satisfactory: Project is on track to fully achieve its end-of-project targets by project closure. The project can be presented as 'good practice'.

(MS) Moderately Satisfactory: Project is on track to achieve its end-of-project targets by project closure with minor shortcomings only.

(MU) Moderately Unsatisfactory: Project is off track and is expected to partially achieve its end-ofproject targets by project closure with significant shortcomings. Project results might be fully achieved by project closure if adaptive management is undertaken immediately.

(U) Unsatisfactory: Project is off track and is not expected to achieve its end-of-project targets by project closure. Project results might be partially achieved by project closure if major adaptive management is undertaken immediately.

(HU) Highly Unsatisfactory: Project is off track and is not expected to achieve its end-of-project targets without major restructuring.

Implementation Progress Ratings Definitions

(HS) Highly Satisfactory: Implementation is exceeding expectations. Cumulative financial delivery, timing of key implementation milestones, and risk management are fully on track. The project is managed extremely efficiently and effectively. The implementation of the project can be presented as 'outstanding practice'.

(S) Satisfactory: Implementation is proceeding as planned. Cumulative financial delivery, timing of key implementation milestones, and risk management are on track. The project is managed efficiently and effectively. The implementation of the project can be presented as 'good practice'.

(MS) Moderately Satisfactory: Implementation is proceeding as planned with minor deviations. Cumulative financial delivery and management of risks are mostly on track, with minor delays. The project is managed well.

(MU) Moderately Unsatisfactory: Implementation is not proceeding as planned and faces significant implementation issues. Implementation progress could be improved if adaptive management is undertaken immediately. Cumulative financial delivery, timing of key implementation milestones, and/or management of critical risks are significantly off track. The project is not fully or well supported.

(U) Unsatisfactory: Implementation is not proceeding as planned and faces major implementation issues and restructuring may be necessary. Cumulative financial delivery, timing of key implementation milestones, and/or management of critical risks are off track with major issues and/or concerns. The project is not fully or well supported.

(HU) Highly Unsatisfactory: Implementation is seriously under performing and major restructuring is required. Cumulative financial delivery, timing of key implementation milestones (e.g. start of activities), and management of critical risks are severely off track with severe issues and/or concerns. The project is not effectively or efficiently supported.