



Kokoda College: Formative Evaluation

Kokoda Track Foundation

Oro Province, Papua New Guinea

2016 - 2018

Executive Summary

This formative evaluation was commissioned by the Kokoda Track Foundation (KTF) to report on the Kokoda College's progression towards a number of outputs and short to medium term outcomes. The purpose of the formative evaluation is to provide project information that will enable KTF to continually improve the delivery of activities at the College and respond to the ever changing policy environment.

The formative evaluation investigated four key questions:

1. What has been the impact of delivering matriculation, pre-service and in-service training programs for education and health-related personnel?
2. What is the likelihood that training delivered at the Kokoda College will have an impact on education and health outcomes in remote and rural PNG? What impact has the training already delivered on education and health outcomes?
3. What benefits does the Kokoda College bring for people and communities?
4. What should be the ongoing focus of the suite of training programs delivered at the Kokoda College? Is there an ongoing need to train more teachers and community health workers for remote and rural PNG?

Via a suite of education, health and livelihoods projects, KTF has endeavoured to improve a range of learning outcomes for teachers and health workers, prepare a cohort of students for careers in teaching and health work, improve health and education outcomes for communities surrounding the College and communities impacted by teachers and health workers, and develop pre- and in-service training programs that can be taken to scale across Papua New Guinea.

KTF's projects delivered at the Kokoda College include Flexible and Open Distance Education matriculation program, Teach for Tomorrow, Teach for Tomorrow II, Eye See PNG, and Village Connect. Together, these projects have achieved a number of outputs and outcomes for students, teachers, health workers and communities over the past 2 years.

In education, a cohort of 47 students from three regions of PNG are undertaking their matriculation studies and are committed to becoming teachers and health workers after they graduate. 440 elementary teachers from across Oro and Central Provinces have completed their Certificates of Elementary Teaching (piloted at Kokoda College) and have reported a series of improvements in knowledge, skills, confidence and educational outcomes for their students. These teachers are all eligible for full certification and transfer to Government payroll positions. Teach for Tomorrow II has worked with 5 Oro Provincial trainers who deliver professional development and in-service training to 479 elementary teachers across the Province. In health, Eye See PNG has been delivered to 50 community health workers who have reported improved skills and knowledge in eye health and the ability to diagnose, treat and refer patients. A number of outcomes for surrounding communities were also reported including access to solar lighting and energy systems, increased employment and livelihoods opportunities, and improved access to schooling and primary healthcare services.

Ongoing challenges for KTF include: navigating the ever-changing policy context and ensuring pre- and in-service training programs are designed with alignment and accreditation from the PNG government; addressing the growing requirement for teachers and health workers for remote and rural PNG when there is unreliable data to clearly diagnose the level of shortages; and designing in-service and professional development programs that meet the wide range of needs of teachers and health workers and then resourcing and partnering with provincial governments to ensure that these programs are rolled out to the remote and rural areas that need them the most.

Introduction

Kokoda Track Foundation (KTF)'s Kokoda College is a post high-school training institution focused on the training and ongoing professional development and support of teachers and health professionals for remote and rural Papua New Guinea (PNG). Whilst teacher and community health worker training and professional capacity development is one of the core objectives of the Kokoda College, KTF is still in the growth period of establishing these pre-service training programs and associated accreditation for delivery at the Kokoda College. This is due to a number of factors including the focus on infrastructure and campus preparation over the past 3 years, major education policy changes and the new minimum entry requirements for the proposed tertiary courses, and KTF's initial focus on completing the pre-service training of a large cohort of elementary teachers across PNG (which was first trialed and accredited at the Kokoda College).

The purpose of this formative evaluation is to reflect on the progress of the Kokoda College project to date in tracking towards several education and health outputs and outcomes; and to inform the design and next stage of the ongoing project planning and project operations at the Kokoda College.

The Kokoda College project is a collection of several sub-set projects that are co-hosted and delivered at the College facility. Some of these projects have been taken to scale and rolled out across additional geographical locations; some KTF only focus their delivery via the Kokoda College campus in Oro Province. The suite of projects delivered at the Kokoda College include:

- Flexible Open Distance Education – preparing a cohort of Grade 10 high school leavers with commitments to the teaching and health work professions to undertake their matriculation studies and gain entry to tertiary studies in teaching and/or health work. An important part of this project is to foster pathways into teaching and health careers and ensure students are supported to continue these pathways.
- Teach for Tomorrow – completion of the mixed-mode, multi-grade, pre-service Certificate of Elementary Teaching for elementary teachers from Oro and Central Provinces. Partnering with the National and Provincial Departments of Education and PNG Education Institute to complete the “old-system” of training elementary teachers across PNG as we prepare to collectively transition to the new system of elementary teacher training.
- Teach for Tomorrow II – in-service, professional development training and support for existing cohort of elementary teachers in Oro Province. The project improves the skills, knowledge, confidence and morale of elementary teachers in remote and rural areas who previously have had no access to professional development an in-service.
- Eye See PNG – in-service, professional development course for Community Health Workers in eye care and eye health. The training gives the health workers the knowledge and specialized skills needed to detect and diagnose various eye issues including refractive error, stigmatism, myopia, cataracts, and eye disease and identify referral pathways for treatment and correction including KTF's Sight for PNG project.
- Village Health Training – First aid and Village Health training delivered to surround communities to improve first aid understanding and skills and empower them to become first responders in remote locations.

- Teachers College – Once accreditation is secured, the Kokoda College will offer the new 12-month Certificate of Elementary Teaching and existing 24-month Diploma of Primary Teaching at the Kokoda College facility, training a new cohort of elementary and primary teachers for PNG.
- Community Health Worker Training School – Once accreditation is secured, the Kokoda College will offer the 24-month Diploma of Community Health Work at the Kokoda College facility, training a new cohort of health workers for PNG.

The premise behind the College project is that the co-location of targeted health and education training services including preparatory training, pre-service training and in-service training will produce a high-quality cohort of teachers and health workers that directly improve remote and rural health and education services across PNG.

The four key evaluation questions were:

1. What has been the impact of delivering matriculation, pre-service and in-service training programs for education and health-related personnel?
2. What is the likelihood that training delivered at the Kokoda College will have an impact on education and health outcomes in remote and rural PNG? What impact has the training already delivered on education and health outcomes?
3. What benefits does the Kokoda College bring for people and communities?
4. What should be the ongoing focus of the suite of training programs delivered at the Kokoda College? Is there an ongoing need to train more teachers and community health workers for remote and rural PNG?

Over the past three years, the Kokoda College has delivered the following training programs:

- Flexible and Open Distance Education: 2017 – 2018
- Teach for Tomorrow: 2016 – 2017
- Teach for Tomorrow II: 2017 – 2018
- Pilot 12-month Certificate of Elementary Teaching: 2015 – 2016
- Eye See PNG: 2017 – 2018
- Village Health Training: 2016 – 2018

This evaluation will endeavor to measure and report on the Kokoda College's progress towards a suite of project outputs and outcomes; and to track overarching progress towards longer-term outcomes and impact. The evaluation outcomes will be used by KTF's board, Programs, Monitoring & Evaluation Committee, senior management and program design teams, and College project personnel to better inform ongoing planning and operations at the College facility.

The evaluation findings will be made available to all key stakeholders including KTF's partners in the Kou Kou 1 and Kou Kou 2 communities, Kokoda College governing council, Provincial and National departments of education, Provincial and National departments of health, teacher, health worker and community stakeholders, financial and in-kind donors and supporters, and co-deliver partners.

Context & Project Description

Education in Papua New Guinea

Papua New Guinea (PNG) is a culturally and socially diverse nation of more than 8 million people. It is estimated that over 850 distinct languages are spoken and communities are spread across some of the world's most difficult terrain. PNG continues to be rich in natural resources, but subject to extreme weather events and natural disasters with many remote and difficult to reach areas. An estimated 88 percent of the population lives in rural areas, often isolated with poor communications, and challenging accessibility (World Bank).

Modern education in PNG effectively began when independence was achieved in 1975. PNG experienced fundamental changes in the education sector from 1995 to 2008 with a dramatic expansion of its education system. The most profound change was to nine years of basic education (three years of elementary schooling and six years of primary) followed by four years of secondary schooling. Elementary schools were introduced for the first time together with a new curriculum aimed at improving the quality of teaching and learning and developing life skills (World Bank, 2016).

In 2012, Papua New Guinea introduced its flagship Tuition Fee-Free (TFF) policy aimed at eliminating tuition fees for students for elementary to grade 12. The policy which put into action the government's Universal Basic Education Plan 2010-2019, was PNG's fourth and longest-lasting attempt to provide free education in Papua New Guinea (Misra, 2017). The overarching goal of the Universal Basic Education Plan was that: "All children of school age must enroll in school, complete nine years of basic education and should have learnt skills, knowledge and values covered in the basic education curriculum." The plan aimed to: improve access, enhance retention, improve the quality of education, enhance the management of basic education, and enhance equality.

From 2012, the government abolished tuition fees for all schooling systems from elementary to high schools to replace parental contributions. Funding for education in the 2010 budget increased by 6 percent overall from 2009 as PNG prepared to introduce UBE, and basic education was the beneficiary of nearly all this increase. Since the introduction of the TFF policy, there has been even further moves to reduce the fees associated with schooling in PNG (Walton, Davda & Kanaparo, 2017). At the start of 2015, the government banned schools from charging project fees (fees levied at the school level to fund particular projects) and subsequently banned church agency fees (fees charged by church administered schools).

The National Department of Education was keenly aware, however, that getting children into school and keeping them in school would achieve little unless an equal priority was given to improving teaching and learning. A number of education interventions ensued including the introduction of Outcomes Based Curriculum in 2005¹; a slow roll-out of teacher training, and a complementary series of curriculum standards. A series of interventions also aimed to improve quality, resourcing and access

¹ Outcomes Based Curriculum was subsequently replaced by Standards Based Curriculum which was still being rolled out at the time of the evaluation

and the Government implemented programs aimed at improving teacher skills and expanding access to textbooks, libraries, and other learning materials for remote areas (World Bank, 2016).

However, in 2015, it was recognized that PNG would not achieve the Millennium Development Goal (MDG) of universal primary education. At the time, the National Department of Education calculated a national net enrollment rate for grades 1-6 of only about 45 percent and a gross enrollment rate of about 78 percent, although there was significant regional variation (World Bank, 2016). An estimated 10 percent of school-aged children did not even get a chance to enroll and 50 percent of those who did enroll, dropped out of school before reaching the sixth grade. The country's net enrollment rate was the lowest in the Asia-Pacific region.

The TFF policy was also considered fragile by observers (Walton et al., 2017). In real terms, the allocation for the TFF subsidy has been declining since 2012, and there are concerns that the current fiscal crunch could squeeze subsidies further (Swan and Walton, 2017). There are numerous reports of TFF payments being released late, resulting in the Morobe (PNG's largest province) Education Board announcing that all schools in the province would be required to impose school fees in 2017 to make up for shortfalls in TFF funding (Badui-Owa, 2016; Swan & Walton, 2017).

The introduction of TFF has resulted in a number of challenges for the education system. Numerous reports of overcrowding in classrooms due to the influx of enrollments as result of fees being removed. Commentary such as the following from the Walton et al. 2017 study is common:

"Before there was no TFF, you could not see crowded classrooms...and then people saw the money come. As soon as it was mentioned that education was free, all our classrooms became overcrowded. We have to build extra classrooms every year."

However, in some locations, over time, the reverse happened. Parents withdrew their children from schooling due to the overcrowding of facilities, high student-teacher ratios, and the poor quality of facilities, learning and instruction. Teacher shortages have been reported across the country because investment required to meet the growing classroom population numbers was not put into the training of a new cohort of teachers in the lead up to TFF. Teacher shortages are especially apparent in the more remote and rural parts of the country (Walton et al. 2017).

The TFF policy's emphasis on increasing enrolments has also reshaped the learning environment within schools. As the TFF policy is open to all citizens, regardless of their age, many older students have come into the system (Walton et al., 2017).

Many schools have also experienced discrepancies between the amount of fee subsidies they have received from the Government, and the amount they should have received based on enrollment numbers. This has resulted in lower allocations of funding per student for the delivery of education including engagement of teachers and support staff and procurement of teaching and learning materials.

As the population of PNG continues to expand, and the Government remains committed to the roll-out of TFF, never before has it been more important to invest in the training of a new cohort of teachers; and in the up-skilling, support and development of the existing cohort of teachers –

especially those serving remote and rural PNG. In addition to this, there is a host of other challenges that the education system faces: overcrowded classrooms, deteriorating facilities, budgetary challenges for schools not receiving full subsidies, reclassification of tuition fees as project fees or maintenance fees, disillusioned school inspectors and teachers who are not properly compensated for their work or supported with the means to properly fulfil their roles.

Free education policies that focus on getting students into schools, without concurrently improving quality education, teaching and monitoring, are taking a toll in many provinces across PNG (Walton et al., 2017). This is especially the case for more remote communities.

Health in Papua New Guinea

PNG has the lowest health status of all countries in the Pacific region. There has been little improvement in almost all health indicators due to the difficulties facing the majority rural population in accessing basic health services. Current statistics are alarming:

- There is an average of 0.58 health workers per 1,000 people in PNG. The World Health Organisation (WHO) recommends 2.5 per 1,000 simply to maintain basic primary care
- A woman in PNG is 37 times more likely to die in childbirth than a woman in Australia
- Only 18.7 % of the PNG population has access to advanced sanitary infrastructure
- With a population exceeding 7,000,000, PNG has approximately 400 Doctors of which 51 work outside Port Moresby despite 87% of people living in rural areas
- 41% of health clinics in PNG receive no funding
- 75% of community health workers in PNG contribute to the cost of health care delivery from their own pocket
- PNG children under 5 years: 27% are underweight & 48% are stunted - little improvement over the past 20 years
- Only 39% of live births in PNG are attended by a skilled birth attendant: - there has been little to no improvement in 10 years

Despite at times rapid economic growth, PNG has the fourth highest rate of stunting (i.e. short for age: an indication of chronic malnutrition) in the world and stagnant levels of immunisation coverage. PNG is now also facing a double burden of disease, with a pronounced rise in non-communicable diseases co-existing with an unfinished agenda of maternal mortality and communicable diseases (Anderson & Martin, 2018). More broadly, the 2015 mid-term review of the National Health Plan 2011 – 2020 found that while some provinces and districts were performing particularly well, overall progress in achieving the National Health Plan at a national level was “sluggish” due particularly to “a failure to build the necessary workforce, and to direct the increased financial resources in the planned direction”.

One of the primary challenges facing the health system is the lack of trained health professionals, especially rural-based community health workers. These health professionals, if trained in the quantity and quality required, have the ability to transform the state of health care in PNG. Other challenges facing the system include the lack of regular supply of medicines and other medical resources to remote and rural aid posts, deteriorating infrastructure, and lack of skilled expertise in various areas

including midwifery, dentistry and eye health.

KTF's Education & Health Program

KTF's Education Program was designed to improve student learning outcomes and deliver increased access to educational services to rural and remote communities. It aims to do this by:

- Training a new cohort of elementary and primary teachers
- Supporting the upskilling and development of an existing cohort of teachers
- Improving remote and rural communities' access to schooling through improved facilities, resourcing and staffing of schools

Likewise, KTF's Health Program was designed to improve community members' access to high quality primary healthcare in remote and rural areas. It aims to do this by:

- Training a new cohort of community health workers
- Support the upskilling and development of an existing cohort of community health workers
- Improving remote and rural communities' access to primary healthcare through improved facilities, resourcing and staffing of aid posts and health centres

KTF's education and health programs are aligned with the Papua New Guinea government's National Education Plan (NEP) 2005-2014 (NEP); the PNG Universal Basic Education (UBE) Plan 2010-2019, the National Health Plan 2011-2020 (NHP), Papua New Guinea Vision 2050 and the PNG Development Strategic Plan 2010 – 2030 (DSP). KTF recognises that supporting the government to create an efficient education system is the most effective and sustainable approach to delivering education services of an internationally accepted standard.

National Departments of Education and Health recognize that there are multiple factors contributing to the challenges currently facing the two systems. These include:

Education Challenges:

- Lack of infrastructure (classrooms, teachers' houses, water and sanitation, energy access)
- Lack of educational materials
- Lack of teachers
- Poor teacher attitude and attendance
- School fees
- Remoteness
- Negative pupil behaviours
- Lack of parental support and community responsibility
- Lack of relevance of schooling
- Tribal fighting

Health Challenges:

- Physical and security barriers reduce access to and delivery of health services
- Health funding is generally not enough to meet the minimum cost of services. Funding also faces significant obstacles to reach front-line health facilities in timely manner
- Medical supplies are frequently out of stock, and are often of sub-standard quality
- Many health facilities require refurbishment to meet national standards, and there is inadequate staff housing in rural and remote areas
- There are too few health workers to meet the demands for health services, and many workers are approaching retirement or over retirement age
- Health workers and managers lack clarity on their roles, rights and responsibilities. They do not receive adequate supervision or in-service mentoring and professional development
- Communities fail to use health services because of out-of-pocket costs, poor health seeking behaviour, poor physical access, and social determinants such as lack of education and violence against women and other law and order issues

The Government of PNG aims to develop a highly literate and numerate workforce within the next 20 years by providing universal access to quality basic education. This will require building capacity within the education system through investment in the training of teachers, rehabilitation of existing primary and secondary school infrastructure, investment in new classrooms and dormitories, and the already completed reduction in school fees. It also aims to improve the delivery of healthcare across the rural population. There are currently 14 community health worker training schools in PNG, all of which are run by church groups, providing a standard, competency-based training course. The number of community health workers however being trained by these institutions is significantly insufficient for the country's needs. For example, in addition to the paucity of health workers, 57% of the existing CHWs across the country are aged over 50 years.

To support the Government of PNG with these important objectives, KTF developed its suite of education projects, within its education program, and health projects, within its health program, that are aimed at improving access to and quality of education and healthcare in remote and rural PNG.

KTF's Kokoda College project addresses a selection of the outcomes intended by the education and health programs:

- Increased number of teachers with formal, high-quality teaching qualifications
- Increased number of teachers receiving regular professional development support
- Increased number of community health workers receiving upskilling and professional development support

Kokoda College Project

The Kokoda College is a post-high school facility located in Kou Kou village, Oro Province. KTF built the Kokoda College between 2014-2015 and has operated it as a FODE Centre between 2016 – 2018. It has also been utilised as a facility to offer the following training programs:

- Flexible Open Distance Education
- Teach for Tomorrow (Oro and Central)
- First Aid Training
- Eye See PNG, Community Health Workers
- Sight for PNG
- Teach for Tomorrow II

The overarching purpose of the Kokoda College facility is to improve access to high quality elementary and primary schooling for children, and high quality primary healthcare for communities, by training, supporting and up-skilling a cohort of high-quality, confident and committed teachers and high-quality, skilled health workers for remote and rural communities across PNG.

Over the course of the three years of designing and piloting training programs at the College, several changes occurred within the education policy setting that influenced the focus and direction of the College. The introduction and roll-out of Tuition Fee Free Policy, as discussed earlier, resulted in the mass influx of many out-of-school children back into school, resulting in classroom overcrowding, shortage of teachers and lowering of the quality of education in many regions across PNG. TFF particularly highlighted the gap in the number and quality of teachers available to meet the growing demand.

Another major challenge was also identified during the College project design and implementation period which was the identification of a large cohort of partially-trained elementary teachers across PNG. In 2018-19, the PNG Government is changing the way it trains and certifies elementary teachers and all new elementary teachers will be required to complete a newly designed and approved 12-month Certificate of Elementary teaching. This Certificate will be rolled out across existing Teachers Colleges and students will be required to enroll and reside at Colleges to complete the course requirements.

However, KTF discovered in 2016 that there was a large cohort of partially-trained elementary teachers who had started their teacher training under what is now being referred to as the “old system” of teacher training. Formally known as the mixed-mode, multi-grade, self-instructional unit Certificate of Elementary Teaching, trainee teachers were previously required to undertake three consecutive years of six-week training blocks. In between each 6-week block, they were instructed to return to their home village, build an elementary school, and put into practice the skills and knowledge they were acquiring in their training.

This system was introduced in 1997 when the layer of elementary schooling was first introduced into the PNG education system. The 6 week x 3-year delivery mode was utilized as a way of training and certifying a large cohort of elementary teachers who were urgently needed in order to open village-based elementary schools in every location where there was a reasonable elementary school-aged cohort of students. Whilst the system worked well for some years, it began to fail approximately 10 years ago when the program was handed from the Australian Government’s AusAID over to the PNG National Department of Education. Since this transition, a large cohort of trainees who began their training at some stage over the past decade, was not given the opportunity to complete and become certified.

At the beginning of 2016, there were 7,500 teachers across Papua New Guinea who fell into this category. These teachers were operating elementary schools right across the country, often in the most remote corners of PNG's diverse terrain. If they were to continue in these roles, they had to undertake the final installment of their training and complete their certification prior to the transition deadline that was imposed by the Secretary for Education. If they did not complete, they would have no option but to enroll in the new 12-month residential Certificate of Elementary Teaching being run out of Teachers Colleges. There are, however, limited spaces in these institutions and tuition fees are beyond the reach of most elementary teachers who have been volunteering under the old system. They would also have to meet the new minimum entry requirements (outlined in the next section).

Teachers who remained partially-trained under the old training system would lose their qualifications and in essence be exited from the teaching profession. Based on a conservative class size of 30 students, if these teachers were to exit the profession, 225,000 students were at risk of losing their schooling.

In 2016, KTF entered into a Memorandum of Agreement with the National Department of Education and PNG Education Institute, that authorized it to deliver and project manage the final stage of teacher training required by the partially-trained elementary teachers. The pilot of this training was undertaken in collaboration with KTF's Kokoda College facility and was used as a base for the training of the partially-trained elementary teachers from Oro and Central Provinces. Hence, the focus of the College, turned to the completion of the delivery of the "old-system" of teacher training in order to prevent the loss of the significant cohort of "existing" teachers from the system; before embarking on the next challenge of designing and delivering the new 12-month pre-service program at the College. This project is known as Teach for Tomorrow and was born directly from the Kokoda College project; and has since been taken to scale across Papua New Guinea. A separate evaluation is being undertaken of the Teach for Tomorrow project and its impact on a range of outcomes across Papua New Guinea².

Around the same time that Teach for Tomorrow was being developed, trialed and taken to scale, another policy announcement was made by the National Department of Education and PNG Education Institute. All new elementary teachers who were to enroll in the new 12-month Certificate of Elementary Teaching, were to now have Grade 12 qualifications and a minimum GPA of 2.2. Elementary teachers trained under the "old system" were only required to be Grade 10 school leavers and there was no minimum GPA entry requirement.

This increase in enrollment requirements resulted in significant angst amongst Provincial departments of education, schools, and communities and will be further explored in this report. However, it is important to note that this policy change shifted the context for the operations and intentions of KTF's Kokoda College project; and that whilst the College delivered and rolled out the Teach for Tomorrow pre-service "old system" training, it could not begin the new system of teacher training without first creating a pathway for Grade 10 school leavers to upgrade their qualifications.

² The Teach for Tomorrow evaluation will be completed by April 2019.

Only a paucity of students who begin school in PNG graduate from Grade 12 and of these Grade 12 school leavers, very few have intentions to embark on careers in elementary teaching. KTF's experience in working with communities and schools indicated that it would be necessary to actively foster pathways for Grade 10 school leavers, with strong desires to become elementary teachers, to upgrade their qualifications to Grade 12 to gain entry into the new Certificate. In 2017, KTF opened a program at the Kokoda College to facilitate the upgrading process within the parameters of PNG's Flexible and Open Distance Education program.

Flexible and Open Distance Education is colloquially known as "second-chance" education in PNG. Students who drop out of the formal schooling system prior to completing; or who do not gain entry into the competitive tertiary program, can enroll in FODE studies and upgrade their marks. Facilitating FODE studies at the Kokoda College is part of KTF's strategy to support and prepare a cohort of people to eventually enroll in the new Certificate of Elementary Teaching, Diploma of Primary Teaching and/or Diploma of Community Health Work – all of which require Grade 12 and minimum GPA qualifications.

Therefore, the aims of the Kokoda College project and suite of projects offered via the facility, are to support, nurture and produce a:

- Cohort of students qualified and eligible for pre-service teacher and community health worker training;
- Cohort of matriculated students with strong desire to train and work as teachers and health workers;
- Cohort of teachers who remain in the profession and are certified;
- Cohort of teachers and health workers who feel supported and have access to ongoing learning opportunities.

This evaluation investigates progress towards these aims and the range of short and medium term outcomes being met by the Kokoda College project. The following section outlines the evaluation scope and objectives.

Evaluation Scope & Objectives

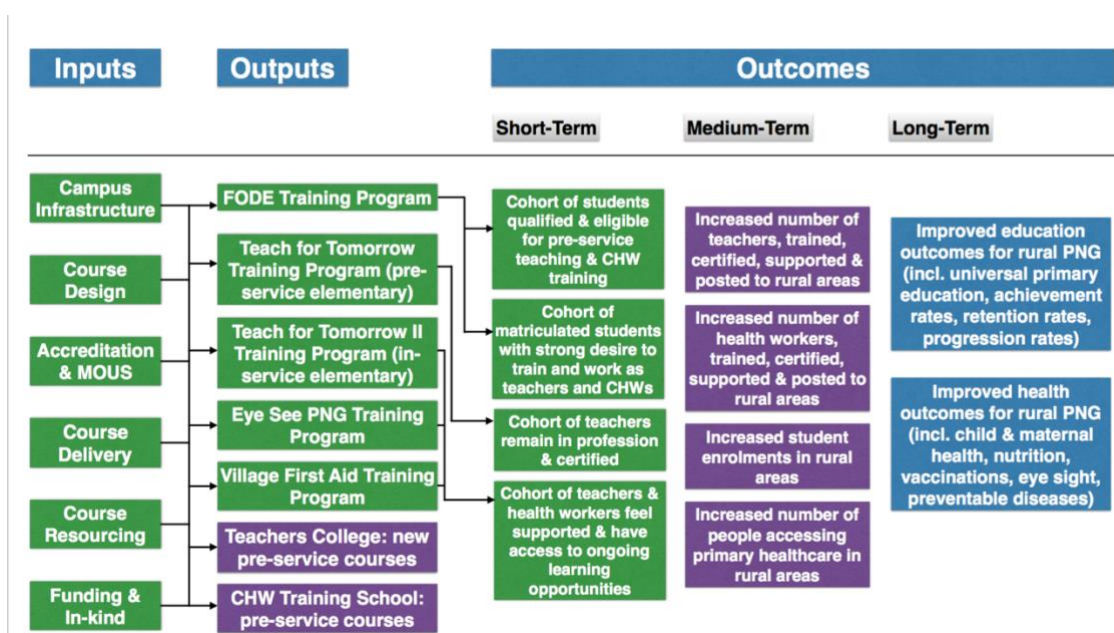
The premise behind the Kokoda College project is that the co-location of targeted health and education training services including preparatory training, pre-service training and in-service training will produce a high-quality cohort of teachers and health workers that directly improves remote and rural education and health services across PNG.

This formative evaluation seeks to examine the appropriateness, effectiveness and efficiency of the operations and outcomes of the Kokoda College over the 2.5-year period of January 2016 to June 2018. Formative evaluation is typically conducted during the program period to improve or assess the program delivery or implementation. With a formative evaluation, learnings can be applied throughout the program implementation period and improvements made and implemented.

The four key evaluation questions were:

1. What has been the impact of delivering matriculation, pre-service and in-service training programs for education and health-related personnel?
2. What is the likelihood that training delivered at the Kokoda College will have an impact on education and health outcomes in remote and rural PNG? What impact has the training already delivered on education and health outcomes?
3. What benefits does the Kokoda College bring for people and communities?
4. What should be the ongoing focus of the suite of training programs delivered at the Kokoda College? Is there an ongoing need to train more teachers and community health workers for remote and rural PNG?

The following program logic was used to guide the project design and implementation of Kokoda College-related activities. A suite of outputs and short-term outcomes were investigated in the current evaluation and will feed into further project refinement over time:



Evaluation Approach & Method

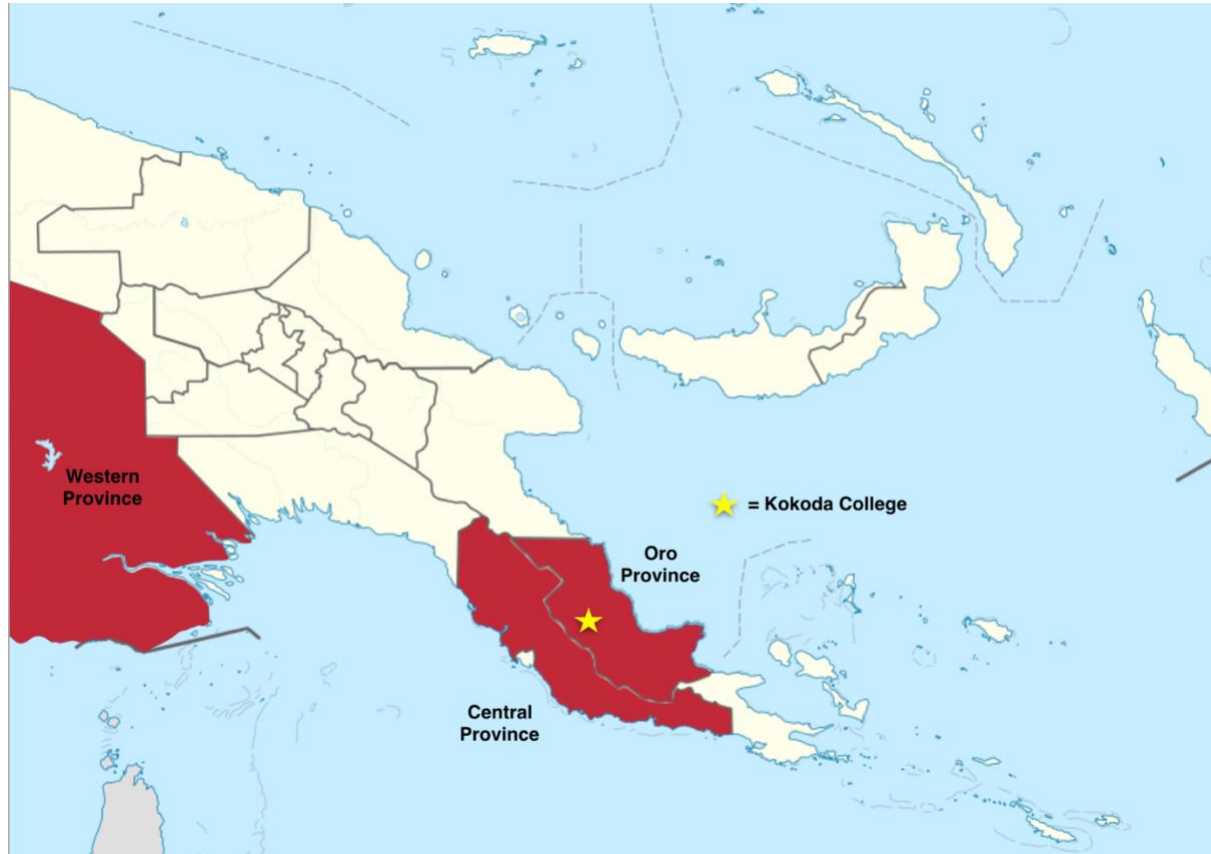
Impact evaluation is the systematic identification of the effects – positive or negative, intended or not – on individuals, households, communities, institutions, and the environment caused by a given development activity such as a program or project. Impact evaluation helps us better understand the extent to which activities reach the people and purpose for which they are intended and the magnitude of their effects. Formative impact evaluation focuses on program improvement. It is conducted early in the life cycle of a program to provide information that can be used to make changes in the operation and implementation of the program. The current evaluation is a formative evaluation.

This evaluation utilised a qualitative research design and consisted of a series of semi-structured interviews and focus group discussions with key stakeholders from the government, community, College, schools and aid posts. This included provincial and district representatives from education and health, teachers, members of school management boards, College staff, students and community members.

Forty-one semi-structured interviews were conducted. Interview participants included:

Type of participants	Number of participants	
	Females	Males
Flexible and Open Distance Education Students	3	3
Teachers	5	4
Community Health Workers	2	3
Trainers	3	3
Department of Education Representatives	2	2
Community Members	3	3
Project Managers / Coordinators	4	1

The majority of participants came from the Oro Province, where the Kokoda College is based; however some participants came from Central and Western Provinces (see Image 1; since recipients of training at the College have represented these two Provinces in addition to Oro Province) and project managers came from both PNG and Australia.



Results

OUTPUTS ANALYSIS

The first stage of the data analysis was to examine and report on the project outputs. Given the various projects aligned with the Kokoda College facility, the outputs are reported here in accordance with each project.

Flexible and Open Distance Education

The Flexible and Open Distance Education (FODE) program was initiated at the Kokoda College in 2017 due to increase in minimum entry requirements for the new Certificate of Elementary Teaching. A phased approach to the introduction and accreditation of the FODE program was applied and in 2017 the College began the delivery of the FODE program with a small pilot cohort of students from Western Province. FODE enrolment numbers at the College over the evaluation period were:

2017 FODE Enrolments; n=38

Grade Level	Females	Females with Disability	Males	Males with Disability
Grade 10	15	2	13	1
Grade 11	1	0	1	0
Grade 12	1	0	3	1

2018 FODE Enrolments; n=47

Grade Level	Females	Females with Disability	Males	Males with Disability
Grade 10	8	1	12	0
Grade 11	3	1	13	2
Grade 12	4	0	2	1

2017 FODE Enrolments; n=38

Region	Females	Females with Disability	Males	Males with Disability
Oro – Kokoda region	7	1	5	0
Oro – Tufi region	7	0	4	1
Western – Southern region	3	1	8	1
Western – Northern region	0	0	0	0

2018 FODE Enrolments

Region	Females	Females with Disability	Males	Males with Disability
Oro – Kokoda region	6	1	8	0
Oro – Tufi region	6	0	9	1
Western – Southern region	3	1	7	2
Western – Northern region	0	0	3	0

Number of students sitting exams in 2018; n=17

Grade Level	Females	Females with Disability	Males	Males with Disability
Grade 10	5	1	1	0
Grade 11	2	0	3	1
Grade 12	1	0	2	1

Teach for Tomorrow

Teach for Tomorrow was piloted in association with the Kokoda College and trainee teachers from right across Oro and Central Provinces were invited to participate in scheduled trainings throughout 2016 – 2017. Teach for Tomorrow is delivered in partnership with the National Department of Education, PNG Education Institute, and Oro and Central Departments of Education. Teachers who complete the program are eligible for certification and government funded payroll positions in

elementary schools. The following tables outline the participation rates of trainee teachers across the two Provinces.

Local Level Government Region – Oro Province	# Teachers Trained	Local Level Government Region – Central Province	# Teachers Trained
Tufi	58	Amazon Bay	10
Safia	26	Aroma	18
Afore	36	Cloudy Bay	12
Oro Bay	59	Guari	6
Popondetta Urban	16	Tapini	7
Higaturu	76	Woitape	7
Kokoda	26	Hiri	15
Ioma	21	Kairuku	12
Kira	12	Koiari	3
		Mekeo Kuni	2
		Rigo Central	8
		Rigo Coastal	4
		Rigo Inland	6
TOTAL	330		110

The breakdown of teachers trained across gender and disability were:

Province	Male	Female
Oro	63%	37%
Central	59%	41%

Province	With Disability	Without Disability
Oro	12%	88%
Central	9%	91%

The breakdown of teachers trained across age groups were:

	Oro	Central
20 – 24 years	1%	7%
25 – 29 years	9%	23%
30 – 34 years	26%	25%
35 – 39 years	26%	23%
40 – 44 years	20%	11%
45 – 49 years	11%	4%
50 – 54 years	6%	0%
55+ years	1%	0%

440 teachers from the two Provinces are now eligible for certification with the National Department of Education, PNG Education Institute and Teaching Service Commission.

Teach for Tomorrow II

Teach for Tomorrow II was piloted at the Kokoda College with five district trainers and 40 head teachers from the region. Trainers are supported with tailored professional development and support programs, structured training for delivery to teachers, and mentoring and follow-up support. The following table outlines the reach of the trainers that were supported in the Kokoda College training undertaken between 2017 – 2018.

Oro Provincial Trainer	Gender	Disability	Number of Teachers	Average Class size	# students (based on average class size)
Trainer – Sohe District; Kira region	M	No	82	26	2,132
Trainer – Ijivitari; Northern Beaches region	M	No	120	32	3,840
Trainer – Sohe; Ioma region	M	No	105	21	2,205
Trainer – Ijivitari; Afore region	M	No	96	30	2,880
Trainer – Ijivitari; Tufi region	M	Yes	76	18	1,368
TOTAL			479	25	12,425

OUTCOMES ANALYSIS

The second stage of the data analysis was to examine and report on the short-term outcomes. These outcomes were explored by semi-structured interview, focus group and case study methodologies. The outcomes will be explored via discussion of the four key formative evaluation questions.

1. What has been the impact to date of delivering matriculation, pre-service and in-service training programs for education and health related personnel?

As outlined in the Kokoda College Theory of Change, a series of short-term outcomes are anticipated. These outcomes include:

- Cohort of students qualified and eligible for pre-service teaching and CHW training
- Cohort of matriculated students with strong desire to train and work as teachers and CHWs
- Cohort of teachers remain in the profession & certified
- Cohort of teachers & health workers feel supported and have access to ongoing learning opportunities

FODE Program

The FODE program is mid-way through producing a cohort of matriculated students who are eligible and still have strong desires to enroll in tertiary training in teaching and health work. 47 students are currently enrolled in FODE studies in 2018 and 36% of these students are preparing to sit examinations at the end of 2018.

A number of themes emerged from interviews with the FODE students, project coordinator and tutors at the College including strong student desire to continue on pathways of teaching and health work, the importance of the FODE program in the context of recent policy changes and gaining entry to tertiary studies in teaching and health work, and the challenges of accessing the FODE program across PNG especially for people living in rural communities.

Pathways to Teaching and Health Work

Two main criteria are critical for the pre-selection of students to gain entry into the Kokoda College. First, they must have an intention and desire to train as a teacher or health worker after they complete their FODE studies; and second, they must come from a community they have a need for either teachers or health workers and have a strong intention to return to this community and work in the teaching or health profession.

Students are interviewed and screened prior to taking up positions at the College. According to one Project Manager:

“We endeavor to find a cohort of students, especially a cohort of students who represent remote and rural PNG and the parts of PNG who urgently need teachers and / or health workers. Students are interviewed and we try to ensure that students who are committed

to career pathways in teaching or health work are given the opportunity to enroll in FODE.”

For the cohort who were in their second year of FODE studies at the College, there was still a significant desire among the group to pursue further training in teaching or health work.

“My observation over the past 12 months has been that the students are still committed to these career pathways. The other activities offered at the College have fostered the students interest in pursuing these careers. For example, FODE students have met many teachers, they have observed the demonstration school, they have seen the training of elementary teachers and had conversations about the importance of teaching. Likewise, those who want to become health workers or nurses spend time with the College health worker, observe the practice of the aid post, and participate in the first aid training and glasses programs at the College. They are still committed to these pathways.”

The FODE students themselves also spoke of their ongoing commitment to the teaching and health work professions. All students interviewed said they were still committed to the original profession for which they were selected and they all had intention to return to their home communities and deliver education and health services after they graduated from tertiary training.

Some students spoke about their commitment to teaching and health professions due to their love of the profession or being inspired by family or community members to follow in their footsteps. For example:

“I love it. Because my dad is one of the health workers and I always like going and watching him do his job, it has created a love in me for health work. I want to become a health worker because I am confident that I can take on that task. I am well confident that I can do it and I can tell myself to do it better. I prefer to become a health worker when I finish my studies.”

Other students related their desire to work as teachers or health workers back to the needs in their communities:

“In my community, we don’t have enough primary school teachers or community school teachers. That’s why I see this opportunity that I have to choose this career. It’s so remote, what I’ve seen in my place, the education system is so broken. There are schools but there are not enough teachers. Materials aren’t delivered and it affects the learning of students. So I have to do my best and get through FODE studies to become someone, to become a teacher.”

This student spoke about her experiences of observing teachers in the Kokoda region and how that has a positive impact on her desire to become a teacher:

“During my stay in Kokoda, I’ve been going up and down between the College and the village and I’ve seen the teachers in their schools teaching. I’ve seen how they move around and conduct things. I am dreaming that I want to be one of them.”

Importance of FODE Program

In addition to the importance of pursuing careers in teaching and health work, many of the students spoke about why the FODE program is important and why access to FODE across PNG has been challenging to date.

Most students spoke about FODE as being their “second-chance opportunity”. Students regularly mentioned the difficulties that students have in reaching and completing Grade 12; this was especially the case for students from more remote areas of PNG.

“In most areas students are not selected [for tertiary studies] because of their cut off marks. So FODE is the only opportunity for students who are left out to upgrade their marks in FODE Centres. But where I come from there are no FODE Centres so the opportunity to come to Kokoda was a blessing.”

Another student said:

“FODE is the upgrading program. It is important that FODE is offered across Papua New Guinea, especially in remote areas because to educates those ones who have dropped in secondary school so they can continue on to further studies.”

Students spoke about the poor quality of schools, teaching and learning in the remote areas and how this prevents them from progressing through school to gain entry into tertiary training.

“It’s the case that a lot of students, especially students from Western Province, are not getting the marks that they need to get into College or University. Because the schools that most students attend have standards that are too low. Lack of teachers, studies and all that.”

Students spoke about the enormous challenges facing their rural communities, especially with limited access to quality education and health care. This awareness and lived experience of the challenges was a common driver of the students’ commitment to their studies and their desire to complete FODE and go onto tertiary training:

“In my area, especially in my village, there are no health services taking place. So if there are any incidents we always must travel to Balimo. We just travel out there and the patient is treated there. It’s hard on the patient and the community. So I want to become a community health worker to save my community.”

These challenges result in a cyclical pattern of low quality schooling limiting students' opportunities to gain entry to teacher and health worker training opportunities. FODE is their second chance opportunity but there is a need to address quality of education at all levels of the schooling life cycle:

"The village people, some of them drop out. Me and my friends, we drop out in Grade 10 because of lack of knowledge and understanding. In Western Province, our standard is very low. And when we can't get through our schooling, we can't train as teachers. And then schools continue to offer poor quality education or have no teachers."

Access Challenges

Finally, students spoke about the challenges they have experienced gaining access to FODE opportunities. Challenges discussed included financial difficulties, struggles accessing FODE Centres and lack of family or community support to enable travel, payments and logistics.

"My parents are not working because of money and some other problems. They're struggling to pay my school fees and so I couldn't make it. I went back to the village and then they told me to stay in the village and look for options. The only reason I am now studying at FODE is because of the possibility given me by KTF."

Many FODE Centres in rural settings are closed or struggle to function due to lack of resources and staffing.

The FODE program at the Kokoda College is training and preparing a cohort of Grade 12 school leavers for entry into tertiary training in teaching and community health work.

Teach for Tomorrow

The Teach for Tomorrow program was completed for Oro and Central Provinces between 2016 - 2017. 330 teachers were trained from across Oro Province and 110 teachers were trained from Central Province. Semi-structured interviews were conducted with trainers, teacher graduates and representatives from the Provincial departments of education to explore the impact of the Teach for Tomorrow program.

Teacher Shortages

Most respondents spoke about the nation-wide challenge of teacher shortages and the importance of the Teach for Tomorrow project in preventing further loss to the teaching profession. This Provincial Education Advisor said:

"Like all other Provinces in the country, we have a shortage of teachers in all sectors – elementary, primary, secondary and TVET. Especially with elementary, we still have

shortages of teachers and in many schools where there are supposed to 3 or more teachers, there are only 1 or 2 teachers.”

Without the training provided by Teach for Tomorrow, all partially-trained elementary teachers across the country would have lost their qualifications received to date, and have been exited from the teaching profession:

“Without the final installment of the training, our teachers who started the trainings before and have been working hard and some even volunteering for many years in the harsh areas, will not be able to finish and will not access payroll or proper formal support. These trainees will forever be trainees and many won’t want to work in the schools anymore; the children will miss out on their schooling because they will lose their teachers.”

This Program Manager spoke about the complexity of the policy changes made by the National Department of Education:

“The changes announced by the Department are aimed at improving the quality of education – especially for the early years when children require a high quality education. However, they did not factor in the importance of at least finishing off the training and certification for all the partially-trained elementary teachers before transitioning to the new system. The new system will train a high quality cohort of teachers because they will receive more in-depth training over a longer period of time. But what about the partially-trained teachers. What will happen to them and the children that they teach?”

Training Outcomes

A number of themes emerged from the interviews with teachers and trainers about the impact of the training on their knowledge and skills, putting learning into practice, and confidence and morale.

Teacher graduates spoke about the changes in their skills and knowledge base and how this has improved their teaching practices in the classroom:

“I learnt many different things from KTF lecturers, many things that we don’t do already in our classrooms. KTF taught us and I was so interested in many areas like picture cards and children’s behavior and mix of abilities. I put it into practice as soon as I returned to my school.”

“The things learnt at the training I transferred into the classroom and that motivated the children’s learning. They were more interested and what I’m finding is that I am more interested in what I’m teaching from the things I learnt at the training. For example, the letters of the alphabet that make phonics sounds and then we make the sounds, showing them the actions and then showing the pictures of the letters plus the word where they find that... it is so interesting!”

One of the trainers also spoke about the impact of the training on the trainees' knowledge and skills base:

"The focus of the training was to get the teachers prepared with a range of new knowledge and skills to make them become better teachers. We focused on programming, planning out lessons, time allocation, subjects and timetabling, how to understand children psychologically and children's behavior. What they have got from KTF will take them a long way."

A number of key curriculum areas emerged across the teachers and trainees interviewed as having been significant and positive learning outcomes from the training. These included orientation to and understanding of the new Standards Based Curriculum, lesson planning, programming and assessment, and cross-cutting issues of child protection and gender equality.

Orientation to the new Standards Based Curriculum was the most common emerging theme in discussions around the improved knowledge and skills of the teachers:

"The part [my teachers] enjoyed the most was getting to know about the new changes with Standards-Based Curriculum and the play curriculum which was introduced. They enjoyed learning and understanding the SBC in a fun way which is currently being rolled out with phonics and everything. The teachers said they want to learn [even] more about that."

Knowledge and skills that focused on planning and programming were also commonly discussed:

"Knowledge transferred to teachers in the classroom were how to plan their program which was very positive and very important to them. Most teachers are now aware of it. They can do their preparation, their planning and programming for teaching that is very important to go along with the syllabus."

Finally, teachers commented on the value that the additional lessons that focused on cross-cutting issues provided them including child protection, gender equity and inclusive education.

"I enjoyed this training so much because what I got from the KTF lecturers was different from other lecturers and lessons we have received in the past. We learnt about child protection and the lecturers put the learnings into practice and taught us how to write policies and procedures and implement these into our classrooms. Child protection and the importance of getting girls to get an education and working with the school board of managements and community leaders to encourage this."

Last Opportunity

The teachers, trainers and government officials all discussed the fact that the Teach for Tomorrow training was the last opportunity for the trainee teachers to complete their training and to become

certified. From 2019, all new elementary teachers will be trained via the new 12-month Certificate of Elementary Teaching from residential Teachers Colleges.

“If this final training was not delivered, it would mean that many schools would have shortage of teachers. Schools have very high enrolments right now and enrolments are increasing and the numbers in classrooms are exceeding 50 students. The training has been delayed and not delivered for many years. The poor children, I don’t know how much they are learning all sitting in crowded classrooms. If the training would not have happened these [trainee] teachers would have resigned because they would have lost their chance to certify. Thanks to KTF we conducted the training for the backlogs that were out there in the rural areas; otherwise the system would have said goodbye to them.”

“Without the teacher going through the final training, it would be impossible for those children because the teacher needs to go through the final training to be qualified as teachers . It would have been chaos because there are things in the modules that teach you as the years go by and the teacher needs to go through the full three year course so they would know how to manage children in the classroom, administration and teach the proper curriculum. Without KTF’s training, it would have resulted in the students not having teachers. Thousands of children would have lost their teachers and schools all over would have closed down.”

Another Provincial Elementary Teacher Training Coordinator commented:

“If the training was not conducted in Oro Province, I believe most of our teachers would be left behind like other Provinces. They won’t be registered in the system. I thank the division and the KTF that came in and assisted us to get the trainings done and trained our teachers; now everything is ok.”

“If the mixed-mode training with the partnership between the Oro division of education and the KTF was not done, most of the teachers would not be graduating. If the training was not conducted, then most of the teachers will be falling back and it would be a big burden for the education system. They wouldn’t teach any more. They wouldn’t continue to volunteer because this was their last chance opportunity. The children would lose their teachers.”

Ongoing Challenges

Trainers and teachers both spoke about a series of ongoing challenges now that the trainee teachers have completed their training and enter the transition to certification. These challenges include delays with the processing of certification, resourcing challenges for trainers and inspectors, and limited availability of in-service and ongoing professional development opportunities.

Provincial Education Advisors spoke about the delays with certification processing and the urgency of completing this process so that teachers do not become more frustrated:

“There has been a hold up in the certification process. It’s been with the Departmental officers and salaries section with no proper coordinator between the two groups. That’s why there’s been a hold up other the teachers would all have received their certificates by now.”

This Provincial Elementary Teacher Training Coordinator expressed similar frustrations:

“We have a lot of our teachers not on the payroll and teachers must be certified before the salaries section can put them on payroll. The teachers have now completed their training and we are waiting for the documentation to be finalized and sent to the teachers so they can be certified and put on payroll.”

KTF needs to continue its efforts to follow up the certification process for all teachers it trains via Teach for Tomorrow to ensure that teachers receive their certificates and are transferred to Government payroll.

Challenges with the resourcing for ongoing training and support were also raised by teacher graduates and government officials:

“There are resourcing challenges for us trainers to provide support to our teachers especially in the remote areas. Some of the teachers can catch a bus and come and we give them advise or otherwise we visit their schools if they are located along the roadside. But for those teachers in the most remote parts of the Province, it’s quite hard. Those along the roadside we can visit and support and have better access to the training and current changes like SBC compared to the ones in the remote locations.”

Finally, trainers and government representatives spoke often about the future challenges that now lie ahead in providing ongoing mentoring, support and upskilling to teachers in the form of accredited in-service programs and professional development.

“The biggest challenge now with everything is supervision, coaching and mentoring. My trainers cannot go out and do these visits anymore. It’s been restricted due to funding and only the inspectors can do this and that if they have resourcing.”

“In regards to education services in rural PNG, there are lots of things that need to be fixed with supervision, mentoring and coaching. Our biggest failure is to do with logistics, transport, resourcing and support for the trainee and fully-trained teachers.”

“We need more training and assistance during the year. Many a times in the year we have a shortfall of funding that hinders the programs for teachers’ in-services. It is a big need.”

Teach for Tomorrow II

Finally, a number of interviews were conducted with trainers who were engaged to deliver KTF's Teach for Tomorrow II pilot at the Kokoda College. This project was piloted at the Kokoda College with five provincial trainers who are responsible for the in-service, development and upskilling of a combined 479 elementary teachers across the Province. The project has since been expanded to four other Provinces (Gulf, Milne Bay and New Ireland Provinces and the Autonomous Region of Bougainville).

The training in Oro was well received by the trainers there and the provincial trainers worked with the KTF teams to design and bespoke professional development program that could be taken to all teachers across the Province. At the time of the evaluation, data was being collected from the trainers on how many teachers had received the in-service program.

"I would say that the training was very fantastic and we got comments from teachers and trainers from other districts and provinces that they wish to have this training. It is so rare for us to receive any additional in-service support and for that support to be targeted at our specific needs."

The main needs identified by the Oro trainers that were then developed and built into the Teach for Tomorrow II pilot were: teaching via English language instruction, story telling and writing books, and planning and assessment strategies.

"The storytelling and story building components of the training were amazing. The idea that teachers and children can build their own resources and create their own books out of their own environments that are culturally appropriate is something that we didn't think about before. It was fantastic. Practical ideas and examples and activities for the classroom."

The lead trainer and program manager described the original intention behind the design of the bespoke Oro training:

"The initial workshop for Teach for Tomorrow II was centred around the building of stories to focus in on English teaching as a base for the Language and Literacy unit of the curriculum. The trainers were uncomfortable at first with the concept of teaching stories in a practical way, of using imagination and exploration to discover new paths to develop a story. As the session developed the trainers became immersed in the training, modelling the activities to each other. The initial discomfort was lifted as we discussed the learning outcomes for students within this style of teaching, the fact that all students do not respond in the same way to classroom activities and a range of teaching resources could be adapted to reach different pupils individual needs."

The trainers spoke of the difficulties that many of their elementary teachers have experienced transitioning from teaching in the local vernacular to teaching in English and the support provided by the Teach for Tomorrow II training:

“Now the new Government policy and the administrative policy has changed the course now. No vernacular will be taught, the language of instruction for elementary would be English alone. So we need to support our teachers. We learnt how to support them and be of assistance and how to plan and deliver lessons to young children, the very young children, in English instead of the vernacular.”

The trainers spoke about the very limited amount of professional development that they have available to them and their teachers:

“We only get what they call a trainer directed training, this only comes once in a while. We need more training that is properly resourced. We need awareness. We need to be able to get all teachers along and address some of the social issues too. Some teachers are married and their spouse doesn't want them going out there. Some have problems leaving the children. We need to take training to the remote areas and deliver it.”

“Around here you will only find rural teachers associated with schools in the very remote outskirts locations. They are in very remote places, very difficult to access, but they just want to be trained and supported and see someone from the department of education on a regular basis. But this is expensive and we have no support from the government to do this. There is almost no access to professional development.”

Not only was there a reported need to address the shortage of professional development training, the program manager described feedback from the trainers which spoke to the need to be creative in teacher training that may not be resourced well:

“At the end of the training program we had a long discussion about the difference between resourcing materials and teacher skill. Could teacher skill outweigh a lack of resources? We agreed that a teacher who is well equipped with pedagogical skills and ideas had the potential to add more value to a classroom of students than a computer lab, but that schools should be able to have both. This was a big U-turn from the first day when they explained they needed computers most of all instead of teacher skill training. As a group we concluded that the skills they need to pass on in training were aligned to the practical story building activities, questioning techniques and Language and Literacy exploration strategies that we had been covering in the workshop. The teacher trainers explained that resourcing ideas for training was a big issue and that the sustainability of practical activities with resources from the environment helped to be able to deliver onwards rather than having booklets/computers that they couldn't pass on.”

2. What is the likelihood that training delivered at the Kokoda College will have an impact on education and health outcomes in remote and rural PNG? What impact has the training already delivered on education and health outcomes?

To explore this question, interviews with teachers and trainers were further explored to examine impact on teaching practices and outcomes for children in schools. In addition to this, interviews with Community Health Workers who have participated in a series of professional development programs at the Kokoda College were examined to explore the impact on improved practice via their delivery of primary health care in remote areas.

Teachers and Student Outcomes

Teacher graduates spoke about the improvements in their teaching skills and practice and the impact that these improvements have had on their students and classrooms. Common themes discussed by teachers included having developed richer learning environments in their classrooms and implementation of specific teaching strategies.

“The changes that I am implementing in my classroom from what I learnt at the training at the moment are the rich learning environments I am creating both inside and outside the classroom. I came straight back to my classroom and made many changes that have improved the learning environment. The motivation of the children has increased as a result and many who used to stay back at home are now coming to school every day. There are changes taking place daily.”

“I completed the training and as soon as I got back to my classroom I practiced very hard what I learnt from there and what the lecturers taught me. I implemented changes in my school and the classroom environment. It is more interesting to the children. I now have visitors who come to my school – parents and community members – so I am interested to learn even more and make even more improvements.”

This teacher spoke about the increase in her student enrolment numbers since completing the Teach for Tomorrow training and returning to her classroom:

“I learnt a lot about teaching young children well and how to plan gender equity activities and assess children’s learning as they progress. I can see that my teaching has really improved and now I am using role play and teaching children to speak in English and they are doing outdoor activities as well compared to before. My school enrolment numbers are now 45-50 students compared to in the past 25. I will need another teacher soon to help relieve the burden!”

Teachers also spoke about the improvements they have witnessed in their students’ learning outcomes. For example:

“I learnt about using the Standards Based Curriculum to teach children properly and many more on the new ideas to teaching young children. I learnt to be kind to the

children compared to the past and how to treat children well and to be patient with their learning. The children’s interest in learning has dramatically increased and enrolments have risen in my class too because learning is more fun than before, and word is spreading fast that my teaching has really improved. Children are reading more, I am taking children out for excursions and we are discovering more about learning.”

Community Health Worker and Health Outcomes

KTF has also delivered a series of professional development programs at the Kokoda College for Community Health Workers mainly focusing on eye health and treatment referral pathways. The following tables outline the number of participants who have completed the professional development program for eye health, known as “Eye See PNG”.

Eye See PNG training, n=50

Training	Regions	Females	Females with Disability	Males	Males with Disability
Kokoda College Training	Oro, Central	12	0	17	1
Highlands Training	Eastern Highlands, Southern Highlands, Western Highlands, Jiwaka, Simbu	6	0	13	1

CHW graduates spoke about the skills and knowledge that they received as a result of participating in the Eye See PNG professional development training. Most of the CHWs interviewed described that their knowledge of the eye, its function, its health, diagnosis, treatment and referral pathways was extremely limited prior to participating in the training.

This CHW spoke about how prior to receiving the training, she would often overlook the diagnosis and treatment of eye issues in her patients:

“What we learnt about the eye demonstrated to me just how very important that organ is to the human body. How we always must have missed how important it was and because we have so many patients that come to us with eye problems as well as other health problems, but we overlooked it.”

The CHWs expressed having received knowledge and skills that were broad and detailed and most CHWs still possessed this knowledge and skills at the time of interview and stated that they were implementing them in their practice. For example:

“During the training, we learnt about the system, the eye, the anatomy of the eye, and then we learnt about different illnesses that affect the eye, or illnesses that can contribute to having eye disease. Then we learnt about screening and then how to test people who have eye problems.”

“What I learnt about the eye training was the detecting, diagnosing a patient with an eye problem and then knowing what to do about it.”

Some CHWs spoke about being given the skills to diagnose and treat eye issues within their existing facility, when previously they thought they didn't have the skills, knowledge or ability to provide the treatment and would send patients away. This CHW spoke about her improved skills:

“Previously, we were trying to refer our eye patients all the way to town for the doctor or a trained nurse who went to further studies at a university to diagnose patients. But now I know that most of the patients can actually be diagnosed and treated at our own facility! And we have the skills and knowledge to transfer to people that we serve in the village to prevent damage to the eye and any things that contribute to the damage of the eye.”

On the other hand, CHWs also learnt that for some issues and diagnoses, they shouldn't provide treatment and would instead have to refer on to other professionals (as limited as they are in rural PNG). For example:

“For some conditions, we also now know that we cannot treat the eye patient and previously we might have been trying different antibiotics and other forms of treatment that will actually cause damage. When we saw the patients again the damage is already done. For some patients, we have to find any referral pathways that are possible for better care and skilled doctors.”

Most of the CHWs spoke of the limitations of referral pathways in their rural areas. For more complicated eye disease and other issues, the only option for the Oro based CHWs is to refer them to Popondetta General Hospital.

“It has been hard to find other services for the patients that we diagnose with cataracts, other eye disease, even patients who just need glasses, there is a lack of possibilities for our rural people. For the most serious cases, I refer them to the hospital in town and there is a doctor there who can help. But for most we do what we can.”

Health workers spoke about implementing the skills they had learned throughout their training into practice.

“I have transferred many skills into my practice. Testing the eyes with a simple eye test, and then telling the patient what lens they need and where they can go to buy it.”

However, many health workers also spoke about the limitations for rural community members in accessing vision correcting services or more in depth follow up diagnosis and treatment.

“People desperately need glasses. But a problem the community here encounters is money. The money to travel and then the money to pay for glasses. If the payment for the glasses is pulled down then they will be able to get them, but the price is too high, more than K20, they hardly buy it.”

KTF has since implemented a glasses provision project at the Kokoda College.

3. What benefits does the Kokoda College bring for partner people and communities?

To explore this question, interviews were conducted with members from the Kou Kou community. This is the community that KTF has partnered with to build and establish the Kokoda College. The community provided the land to the KTF and were engaged in the project design and development. KTF has worked with the community to develop and deliver a number of projects within the community to target specific health, education and livelihoods outcomes. These include:

- Aid Post: established within the grounds of the Kokoda College campus, the aid post facility is resourced and staffed by KTF community health workers and primary healthcare is available free-of-charge to all members from the surround communities (and students and staff at the College). KTF also supports the nearby Kokoda Hospital which is accessed by the people of Kou Kou 1 and Kou Kou 2 for more serious health needs that can't be addressed at the College aid post;
- Village Connect: household lighting and energy solar systems were installed on every household in the villages Kou Kou 1 and Kou Kou 2 giving the community access to a renewable, sustainable lighting and power source;
- Kou Kou Pre-school: a pre-school was constructed in the village and is operated and resourced by KTF teachers. All pre-school aged children in Kou Kou 1 and Kou Kou 2 attend the school;
- SolarBuddy: individual solar lights from school-aged children in the community to use to study by at night;
- Light Up PNG: training and capacity support for the establishment of women-led solar, microenterprises from which women can earn an income;
- Sight for PNG: pilot of KTF's refractive error testing scheme and provision of prescription spectacles and reading glasses for people in need.

In addition to these specific projects, KTF also prioritises the Kou Kou 1 and Kou Kou 2 people for a range of employment opportunities at the Kokoda College including security, maintenance, infrastructure, cooks, cleaners, and some management/support staffing positions.

Interviews and focus groups with the representatives from Kou Kou 1 and Kou Kou 2 revealed widespread support for the Kokoda College project and a high level of appreciation for the benefits that the College and associated development projects have brought to the villages.

Most community members spoke about the major benefits that employment has brought to the community and that this is the first opportunity the large majority of community members have had to access paid employment (withstanding some employment from the trekking industry).

This community member spoke about the benefits of local employment:

"It is a great chance especially for the youth in the village. They normally would have to go out to the market doing the fresh veggies selling or otherwise they might have to do the trekking. Porterage and walking up the mountains you can't do for very long. That's how they live and earn some little bit of money for their living. But somehow now they

are very happy just because of the College and then they have started looking for opportunities to work at the College and have a little bit of Kina in their pockets.”

The village councillor outlined the range of employment opportunities provided by the College:

“We brought up job opportunities for the village. They’re benefiting out of KTF and the College. We’re doing security service and cooking for others and doing some other work. Some of the staff or volunteers, they come in and work at the College and they are sleeping in our guesthouse and earning some money in our guesthouse.”

Another woman spoke about the specific employment opportunities they had received from the College and that these were rare for women to have access to employment opportunities:

“It’s the first of its kind this College and the jobs opportunity for the Kou Kou village women. My women’s lives are very bright and this brightness comes from the women benefiting out of the caterings and cooking at the College. Never before have they had this chance. Now the children can have their school fees paid for and whatever they need, whatever the women need, so they support me as one of their leaders so that we can all benefit from the College.”

The solar lighting and energy systems have reduced villagers’ reliance on kerosene and wood fire and have improved opportunities for students to study after dark and parents to work on small businesses. The councillor spoke about the reduced need to purchase kerosene and batteries and how they no longer have to pay for mobile charging facilities at local trade stores:

“It has been very good support from KTF for the solar lights. Now that we have the solar systems received in every household, we’ve cut down in every course that we were spending money on light. We were spending most our money on batteries and kerosene and suddenly we are now very very happy that we have our own lights in our house. We don’t need to spend money on batteries or kerosene now. We now plug in our mobile phones and we do not have to spend money charging our phones; we have free charging and we have free lights. We can now spend our money on other things that we do not have.”

“It’s also helping our children to do their homework assignments and everything. Every night they are using, they’ve got light here now to do their assignments. They spent longer time now that the sun goes down and they don’t have to rush doing the work before the sun goes down. They can do chores and play and help their parents.”

Community members spoke about the impact that the local aid post and health worker at the College has had on their health and wellbeing.

“The health post helps us with healthcare. It provides medicines whereas most of the time when we would go to the hospital they would say ‘no medicines’. We come to our small post which always has supplies and the health worker is always there. The

medicines are always new ones, it's not expired, which helps us to get cured. It has helped us a lot."

This community member spoke about the benefits of having healthcare brought directly into the community and sometime delivered in people's homes:

"We've been healed so many times by the health worker from the aid post. It's easy access to health services for the first time ever, especially for mothers and children, and the community health worker, if we can't walk to the aid post, he comes up to the village. He comes up even in the night, in the rain, and helps the people who need his help."

Finally, people from the community spoke throughout their interviews about how the College is a one-stop-shop for a host of training opportunities and development activities; and how this is the first of its kind for the region. For example, the village councillor stated:

"So far this College is the first of its kind here in Kokoda. It has given us a very very very good support to the village. It has brought so many services and different types of trainings that help our rural people. Trainings that we would normally travel to Port Moresby for are given here in the village. First aid training for our rural people, sometimes we use these in our daily lives of in trekking. Women are supported to establish small solar shops and we get employment at the College. Health and solar services are delivered to the community. And our children go to school and our adults are training up in FODE and teacher training. Everything is together. That's where I'm very very happy with KTF."

There was strong consensus amongst the discussions with all community representatives that the College had enhanced a range of health, education and livelihood outcomes for the people of Kou Kou 1 and Kou Kou 2.

4. What should be the ongoing focus of the suite of training programs delivered at the Kokoda College? Is there an ongoing need to train more teachers and community health workers for remote and rural PNG?

This final question was explored via interviews with PNG government representatives and KTF program managers. Themes from across these interviews spoke to the unique role that the Kokoda College facility has in delivering a suite of training programmes across education, health and livelihoods services, and the benefits that the co-location of training services bring to enhanced service delivery. The interviews also clearly demonstrated a strong, ongoing need for the College to continue delivering the FODE program, to progress urgently towards the accreditation and opening of the new 12-month certificate of elementary teaching and to expand and infrastructure and delivery of the diploma of primary teaching and diploma of community health work.

Interviews with government representatives highlighted the important need for ongoing teacher pre-service training and their support for KTF's endeavours to commence the 12-month certificate of elementary teaching from 2019. However, even stronger themes emerged from the interviewees around the need for ongoing in-service and professional development opportunities for the existing cohort of elementary teachers, including the cohort of teachers trained by KTF's Teach for Tomorrow project.

This project manager said:

"The Provincial Education Advisors, Elementary Training Coordinators, and trainers themselves are crying out for ongoing in-service training for teachers across the two Provinces. They are trying to balance the needs of their existing teachers with the unknown future of teacher training and what elementary teachers will be required to do moving forward. There is some talk of mandatory upskilling for elementary teachers, but not much clarity around how this will be resourced and rolled out."

This uncertainty around the in-service requirements for elementary teachers moving forward was also reflected by Provincial department of education representatives.

"To improve the education services in the remote locations we need to get most of our teachers involved in short workshops or in-services to attend these refresher courses so they are aware of the new changes that are coming in so they can deliver these to our little children. But no one is funding these and no one is saying how many teachers need to do and whether they must do in-service or some form of upskilling like FODE in order to remain as teachers."

Provincial government representatives also spoke about the gaps in the number of teachers in their provinces but acknowledged there were difficulties with accurate data collection and therefore with the ability to state how many more teachers are required. For example:

"We have gaps, we have positions vacant here because in some areas teachers have passed away, or the teachers have left and the schools are vacant, others have walked

off the job and others didn't have teacher to begin with. TFF has created overcrowded classrooms too. So we need to train more teachers and send them off to do teacher training so they will come back and fill those positions up. But at the moment we do not know how many teachers need to be trained because we don't have the data."

The KTF project manager in charge of Teach for Tomorrow reflected on what she believed KTF's contribution could be moving forward:

"As KTF approaches the end of Teach for Tomorrow Part I, we have two more Provinces to go, we now need to determine how we can simultaneously train a new cohort of teachers via a pre-service teacher training program and support the existing cohort of teachers who desperately need further support and in-service. The College gives us a unique opportunity to do this. We can deliver the new 12-month Certificate of Elementary Teaching and contribute to the current gaps in the system; but we can also pilot an in-service program that can be taken to scale, just like Teach for Tomorrow I across the country – stemming from the Kokoda College pilot work that KTF has done to date."

Another project manager reflected on the importance of taking a holistic approach to the suite of programs provided at the College:

"The strength of the Kokoda College is that KTF takes a holistic approach. It has become very apparent that the FODE program is now a necessary precursor to providing any pre-service teacher or community health worker training due to the increased minimum entry requirements and difficulties that people from the rural areas across Oro and Central have in progressing all the way through to Grade 12 education. FODE is the necessary first step, and then the co-location of education and health training, the delivery of best-practice schools and health facilities on site, the support of community health, education and livelihoods needs, and the fostering of enthusiasm and pathways for students into teaching and health careers. It creates this hub of activity focused on improving the rural health and education system which is exciting everyone who is a part of it."

Finally, provincial government representatives were directly asked what the focus areas of training delivered at the Kokoda College should be moving forward. A number of focus areas were highlighted as priorities for the PNG government including pre-service training for the creation of more teachers and community health workers, and urgently needed in-service and professional development opportunities for teachers and health workers.

In health, suggestions were given to expand the current focus on eye health and eye care to also include midwifery, dentistry and public health.

"It would be useful if Kokoda College could expand their health training program to cover maternal health and child health. Mothers have breast cancer, most women are unable

to diagnose themselves or find it when it's too late. HIV training and awareness is another important area. We need more midwifery training too."

"Eye issues are extremely common here so it's great that KTF offered this program of upskilling for the rural health workers. Dentistry and oral health issues are also very common and so teaching our health workers how to educate and give treatment for these types of concerns would be of good improvement too."

In teaching, recommendations were provided by provincial education representatives that focused on continued support for the transition across to Standards Based Curriculum and more focus on child protection and the creation, implementation and monitoring of formal child protection policies.

"There has been a lot of pressure on our department to deliver high quality training and orientation to the new Standards Based Curriculum for teachers but with limited resourcing. We need more help to focus our teachers on this new curriculum and to also support of trainers and inspectors to make sure it is being implemented by teachers in their classrooms."

"Child protection is another important area that our teachers can do with more support and training in. How to implement consistent policies across the board and make sure teachers are learning about how to insist on strong child protection practices in their schools and joining efforts with parents, communities and school boards of management."

Discussion and Recommendations

The current formative evaluation sought to answer four key evaluation questions in order to enable KTF to begin tracking and reporting project outputs and short to medium-term outcomes and to feed into ongoing project development and improvement. The four evaluation questions were:

1. What has been the impact of delivering matriculation, pre-service and in-service training programs for education and health-related personnel?
2. What is the likelihood that training delivered at the Kokoda College will have an impact on education and health outcomes in remote and rural PNG? What impact has the training already delivered on education and health outcomes?
3. What benefits does the Kokoda College bring for people and communities?
4. What should be the ongoing focus of the suite of training programs delivered at the Kokoda College? Is there an ongoing need to train more teachers and community health workers for remote and rural PNG?

The research undertaken and discussed here highlights that the Kokoda College is tracking well towards meeting a number of intended outputs and short-term outcomes; and alterations to the initial intention of the College have been implemented in a way that enabled the College to meet the needs of prospective and current and students, teachers and health workers.

The College has achieved a number of key objectives including: establishing a FODE Centre and offering the matriculation program to a cohort of students with strong desires to become teacher and health workers. Given the new policy setting and changes in requirements for entry to tertiary studies, the College is fulfilling its objective to identify students from remote and high-need communities across PNG and foster pathways into tertiary teaching and health work via a matriculation trajectory. KTF should continue to track the progression pathways of these students both into the tertiary training courses to be offered at the College from 2019; and into other Teachers Colleges and CHW Training schools across the country.

KTF's Teach for Tomorrow pilot projects at the College for Oro and Central trainees have achieved a number of intended short to medium term outcomes. These include: 440 partially-trained elementary teachers completed their training and eligible for certification; 440 teachers returned to operate their schools across remote and rural Oro and Central Provinces; high levels of reported confidence and commitment to the teaching profession; and self-reported improvements in teaching practice and student outcomes since undertaking the training.

Teach for Tomorrow is currently being evaluated via an external, in-depth evaluation; however conservative estimates are that the training delivered to teachers across Oro and Central provinces prevented a loss of 440 teachers to the system, keeping over 13,000 students in school.

Likewise, the education and health in-service training programs also achieved a number of self-reported improvements in teaching and health worker practice and education and health outcomes for communities. For teachers, this included improved knowledge and skills particularly related to the new standards based curriculum, child protection and gender equity, and English language teaching

and learning. For health workers, this included improved knowledge and understanding of eye health, diagnosis, treatment and referral pathways.

Ongoing monitoring and evaluation should investigate the longer-term impacts of these specialised in-service training programs on teacher and health worker outcomes and outcomes for students and communities. In-service training should be expanded for both teachers and health workers. Teach for Tomorrow II must continue to engage National and Provincial education authorities to confirm some sort of formalized accreditation for the in-service programs developed so that opportunities to roll-out and take the project to scale are possible. This project should also explore concerns raised by teachers and trainers around what will happen to the existing cohort of elementary teachers if they are not given opportunities to up-grade and enroll in current in-service programs offered by PNG Education Institute.

Health professional development training options should be expanded to offer training beyond eye health that support health workers in midwifery, child and maternal health, dentistry and public health. These professional development activities could also be expanded beyond development for community health workers and could include village health volunteers, nurses, and rural health extension officers.

The Kokoda College operations should continue to deliver the FODE program, in-service training for teachers and health workers, and pathways for accreditation for pre-service teacher and health worker training should continue to be rigorously pursued. An independent evaluation of the Kokoda College project activities and outcomes should be undertaken in two year's time. This evaluation should explore the College's contribution to a number of outcomes and impacts, enabling KTF to build an assessment based on the ongoing perceptions of a range of stakeholders including students and graduates of College training, community members, and government and community partners.

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KTF is an international development organisation that has been operating in PNG for over a decade. Our purpose is to work with people and communities to improve the lives and futures of Papua New Guineans. We work in partnership with communities, identify their needs and strengths, and together implement projects that achieve long term changes. We have recently expanded beyond the Kokoda catchment region in Oro and Central Provinces and support communities across 16 Provinces.

Over the past decade, KTF has delivered aid and development activities in the areas of education, health, livelihoods and leadership. This has included the construction of school and aid post infrastructure, including WATSAN, along and around the Kokoda Track, delivery of educational supplies to 50 schools and drugs and medical supplies to 15 aid posts, postings of over 50 teachers and 20 community health workers, distribution of over 14,000 solar lights, and the design and delivery of the Archer Leadership program for 8 years. Over the past 2 years, KTF has trained 2,685 elementary teachers via its Teach for Tomorrow project.

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