



FIRE-FREE VILLAGE

PROGRAM

REVIEW 2016



CONTENTS

The Fire Free Village Program.....	3
Introduction.....	4
Methodology.....	4
Carbon Conservation’s independent review.....	4
About Carbon Conservation.....	5
Post 2015 El Nino Fire Season: A Changed Political Landscape.....	6
Learning, evolving and building on historical efforts.....	6
Importance of the Kampar Peninsula’s geographic context.....	7
The Fire Free Village Program.....	8
Brief Description.....	8
Review of 2016 Results.....	9
KPI 1: Short-term contribution to the reduction in burnt areas and positive engagement with the communities.....	10
KPI 2: Long-term community cultural shift, socialization, and adoption of fire free alternative livelihoods.....	10
KPI 3: APRIL’s potential return on investment.....	10
Review Of Project 1 - No Burn Village Rewards.....	11
Project 1: Execution and Impact of No Burn Village Rewards.....	15
Review Of Project 2 - Village Crew Leaders.....	16
Project 2: Implementation and Impact of Village Crew Leaders.....	20
Review Of Project 3 - Agricultural Assistance.....	21
Project 3: Sustainable Agricultural Assistance.....	29
Review Of Project 4 - Community Awareness.....	30
FAC Goes To School 2016.....	31
Project 4: Community Fire Awareness.....	35
Review Of Project 5 - Air Quality Monitoring.....	36
Project 5: Air Quality Monitoring.....	38
Closing Remarks by the Author.....	39
Appendix 1: Village Leaders & Crew Leaders.....	41
Appendix 2: Questionnaire Survey.....	42



THE FIRE FREE VILLAGE PROGRAM

The Fire Free Village Program is a fire management project founded on close engagement with local communities. It targets the root causes of fires and seeks to address them by focusing on socialization, education and awareness of the negative impacts of fires. Officially launched by APRIL in July 2015 with support from local NGOs and local government, police, military and Riau's Disaster Mitigation Agency, the program has now concluded its second year and is continuing to improve and adapt its five key initiatives:

	<p>1</p> <h3>No Burn Village Rewards</h3> <p>Incentivizing villages not to burn.</p>
	<p>2</p> <h3>Village Crew Leader</h3> <p>A program to recruit individuals from local communities as fire prevention advocates and fire suppression specialists at the village level.</p>
	<p>3</p> <h3>Agricultural Assistance</h3> <p>Provision of a range of sustainable agricultural alternatives and mechanical land clearing tools for land management activities.</p>
	<p>4</p> <h3>Community Fire Awareness</h3> <p>A range of community tools to raise awareness of the dangers of land clearing by fire and its impact on community health.</p>
	<p>5</p> <h3>Air Quality Monitoring</h3> <p>Installation in 2016 of three <PM10 detectors with a further four purchased for deployment in 2017 augmented by the sharing of air quality and health information.</p>

INTRODUCTION

For a second year, Carbon Conservation (CC) has been commissioned by APRIL to undertake an independent review of its Fire Free Village Program (FFVP) in Riau, Indonesia.

The FFVP is the second stage and flagship of an extensive three-stage program to develop community capabilities in social, economic, health, education and the environment to create a fire free future:

1. **Fire Aware Community (FAC)** socialization and engagement before entering FFVP;
2. **Fire Free Village Program (FFVP)** and its five project areas for two years; then
3. **Fire Resilient Community (FRC)**, which has ongoing engagement after FFVP.

Officially launched in July 2015, FFVP is a vital response to the annual fire season, which creates significant fire risk and is responsible for huge losses of life, forest and property as well as threatening community health across Indonesia. FFVP seeks to prevent the fires rather than fighting or suppressing them after they have started. In 2016, by expanding its nine pilot villages from 2015 by a further nine villages and focusing on

close collaboration with these communities, APRIL has implemented and expanded the five key FFVP projects: No Burn Village Rewards, Village Crew Leader, Sustainable Agricultural Assistance, Community Fire Awareness, and Air Quality Monitoring.

Conceived, initiated and driven by APRIL, the program is executed in partnership with villages and local NGOs, and supported by the local government, police, military and Riau's Disaster Mitigation Agency. Furthermore, in response to the devastating fires of 2015, APRIL has initiated an innovative alliance of agricultural companies to share experiences, and knowledge and expand the FFVP via the Fire Free Alliance (FFA).

The purpose of this review is to provide an independent evaluation of the FFVP in 2016 in line with the APRIL commitment to transparent information sharing and pragmatic learnings geared towards finding long-term solutions to fires and deforestation in Indonesia. This review covers the five key initiatives of the program, the means and resources invested, and their results. It is intended to highlight the strengths of the program as well as addressing shortcomings and challenges; the aim is to provide objective analysis and pragmatic recommendations.

METHODOLOGY

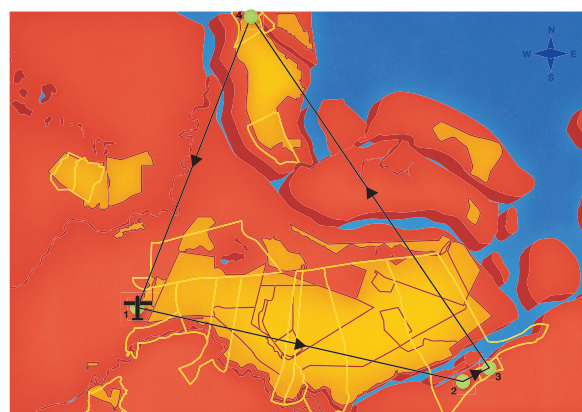
Carbon Conservation's independent review has been based on:

1. Ground-truthing: A three-day field trip organised by APRIL, including visits to four villages with one extended stay, a market visit and interviews with NGOs and stakeholders. CC met four village heads which included a range of samples from a second-year participating village that received zero reward and was responsible for several hundred hectares of fire damage, to a new village that received a 100% reward.
2. Aerial survey: A helicopter inspection complemented the car based ground-truthing to look more closely at burnt areas for any signs of fresh plantings potentially indicating intentional fires for agricultural purposes. The aerial survey also allowed assessment of access points and burnt areas and whether fires may have been started innocently from a stray cigarette butt, for example, or intentionally in areas far from other villages with little access or multiple claims on the land.
3. Qualitative interviews: Targeting village leaders, crew leaders and local workers in four villages, as well as extended interviews with the executing team and senior management conducted by CC.
4. Community interviews: On-paper surveys over a two week period after the season from Monday 7th November to Saturday 18th November conducted by two surveyors (Riana Ekawati and Frans Romario Tarigan of APRIL's team). Interview subjects were selected randomly on the day by walking into the village and requesting to speak to people. The survey team was instructed to ensure that women and people under the age of 18 were included in the surveys. Quantifiable community questionnaire surveys consisted of 12 standardized questions conducted across all 18 participating villages with 140 completed and collected, scanned and tabulated by APRIL's team and sighted by CC (please see Appendix 2 for original questionnaire and breakdown of tabulated results).
5. On-camera interviews: A local NGO undertook video interviews – compiling over 500 minutes of video footage with CC in attendance.
6. Financial review: Examining 2016 project budgets compared with 2015 documentation and records and desktop review by CC.

In 2016 CC has simplified its evaluation criteria to assess the effectiveness and efficiency of the five FFVP projects to only three key performance indicators (KPIs):

1. Short-term contribution to the reduction of burnt areas and positive engagement with the communities.
2. Long-term community cultural shift, socialization, and fire free alternative livelihoods.
3. APRIL's estimated return on investment.

Each of the five FFVP projects were then evaluated for their effectiveness against each of these three KPIs and against the general success of each project's execution. With regards to measurement of the baseline for burnt areas, one limiting factor in the accuracy of this measure as a comparative benchmark is that there are no formal records of the number or extent of fires from previous years. APRIL has therefore established estimates on the historical burnt areas based on evidence from burn scar maps, aerial surveys, ground inspections and discussions with communities.



Helicopter path of aerial survey of the burnt areas and landscape.

No Line	Flight Time (HRS)	Lenght (KM)	Remarks
1	0,6	113,6	PPL to Pulau Muda Village
2	0,1	10,6	Pulau Muda Village to Segamai Village
3	0,8	114,9	Segamai Village to Sei Hiyu (PPD sector)
4	0,6	104,8	Back to Airstrip
Total	2,0	373,5	

No Point	Latitude	Longitude
1	101 55'23,535" E	0 29'36,006" N
2	102 55'4,689" E	0 15'57,833" N
3	102 59'58,933" E	0 18'28,168" N
4	102 16'3,326" E	1 23'24,695" N

ABOUT CARBON CONSERVATION

Carbon Conservation is a privately held company established in 2007 in Australia, and now based in Singapore. Specialising in conservation, sustainability and environmental finance, Carbon Conservation brought the first world reducing emissions from deforestation and degradation (REDD) carbon credits to market with an Australian project as part of the Greenhouse Friendly Scheme selling the carbon credits to global giant Rio Tinto Aluminium. Carbon Conservation is best known for its innovative 750,000 ha Ulu Masen Ecosystem Avoided Deforestation Project in Aceh, Indonesia which won the Carbon

Finance Deal of the Year award. It was also the subject of an award winning documentary, "The Burning Season", narrated by Hugh Jackman which explained how orangutan conservation and avoided deforestation could be tied in to generate alternative monetary incentives. CC is represented by Dorjee Sun, founder and director of Carbon Conservation and has worked on large scale sustainability and carbon conservation projects globally with project partners and clients such as Rio Tinto, Bank of America Merrill Lynch and Olam. His areas of expertise are conservation, agriculture, education and technology.

POST 2015 FIRE SEASON: A changed political landscape

The intense smoke haze created by the 2015 fire season spread across Asia, triggering an international diplomatic situation for Indonesian President Joko Widodo. The domestic and international attention to the issue, including significant media coverage, placed pressure on Jakarta to take strong action and resulted in Presidential Decrees and moratoriums on development on peatland. It has also led to tougher punishments for those responsible for fires. Landmark legal cases have been heard in courts and the Jakarta district court has ordered sago plantation company PT National Sago Prima to pay a record 1 trillion rupiah (\$107 million) fine for causing 3000 hectares of fires in 2015.

With this momentum and media attention, the negative environmental and social impacts of using fire to clear land have been established in the minds of the communities. Perhaps more importantly, the actual impact of the haze on the health of friends, family and neighbours and discussions among villagers have deeply affected the communities and propelled socialization and education efforts. Below is a selection of comments by villagers from the questionnaires and surveys of FFVP villages.

Nurhayati from Teluk Binjai (45 years):

"My neighbor had a baby who was only 10 days old. So sad, because of the haze the baby died!"

Misdianto from Teluk Meranti (55 years):

"Although I have been sick before, I never went to the hospital. But after the haze last year I have to continuously go to the hospital because of trouble breathing and asthma."

Ana Mariana from Teluk Meranti (39 years):

"Last year, I was hospitalized because my cough got worse."

Intan Permata Sari from Sering (24 years):

"My grandpa had to get surgery to clear his lungs."

Clearly, FFVP has established a receptive audience and taken root in the communities, providing village leaders with a stronger platform to support the fire free messages and FFVP project implementation.

Learning, evolving and building on historical efforts

Against the backdrop of 2015's fire season, it is clear that where a significant common threat exists, corporate actors have an obligation to go above and beyond fire suppression budgets and the normal Corporate Social Responsibility (CSR) baselines. If fires were to break out unchallenged in plantations areas including those of long-term suppliers, their paper businesses would be greatly impacted. APRIL estimates damages

caused by fire at around USD 140M between 2009 and 2015. This is some USD 20M per year on top of the USD 3-4M annually spent on firefighting teams and suppression, as well as the USD 6M for fire extinguishing equipment. As such, FFVP now touches many aspects of APRIL's business, from its community development CSR, fire suppression strategies, education, environmental restoration investments and awareness and communications efforts.

This has been an evolution starting from 1993 when APRIL implemented its first recorded "no burning" policy for land clearance. Between 1993 and 2013 APRIL developed its Fire Alert Communities program which supported the creation of the Forest Fire Brigade called the "Manggala Agni", and the Fire Care Community Groups called the "Masyarakat Peduli Api" (MPA) by the Ministry of Forestry. Over the years, APRIL has trained and equipped at least 400 people in villages near its concession areas through its Fire Alert Communities program.

In July 2014, APRIL launched the innovative Village Incentive Program in an effort to mitigate the recurring fire and haze problem in Riau. Teluk Meranti's successful fire prevention efforts were rewarded in November 2014 with Rp 100 mill. (USD 7,614) from the APRIL community development fund. The Village Incentive Program was a pilot project that included fire-prone areas such as Teluk Meranti, Sering, Teluk Binjai and Pulau Muda villages and sought to test the reward mechanism for good behavior as an engagement tool. Whilst there were concerns about potential risks and backlash from providing this type of one off reward, by directing the funds into shared community assets such as road improvements, buildings or market place construction, the reward provided a short term, immediate and visible reminder of the benefits of not burning.

From October 2014, building on the learnings from the Village Incentive Program, the MPA and the deeper long term community development programs, APRIL considered a new pilot program focusing on developing long-term relationships with the local communities. The objective would be to build on their existing corporate commitment to reduce fire and haze from both existing estates and neighboring communities. This was to be the first iteration of FFVP and at this stage it was planned for five to six villages over two years.

By December 2014, FFVP had expanded to the current five project areas and internal approval was sought for a detailed charter including selection criteria for the first pilot batch of village partners.

By January 2015 a Fire Free Project Manual had been developed focusing on root causes of fire, "Fire fighting is the response; not the solution, it is

1993

2014

2015

2015

like treating a cold with a box of tissues.” said FFVP lead, Craig Tribolet.

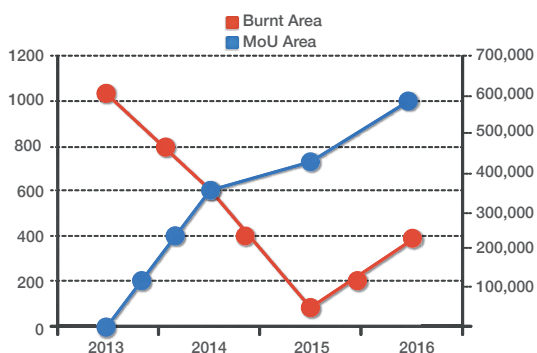
Village selection was complete by February 2015 and was based on risk maps around APRIL’s concessions which identified 6 criteria: Actual Fires, Land Claims, Human Activities, Accessibility, Land Cover and Incursion Data. From an initial pool of 72 villages across three separate Districts – Pelalawan (39 villages), Kuantan Sengingi (14 villages) and Siak (19 villages), nine villages were selected for FFVP 2015.

On 28 July 2015, the pilot program was officially launched in Pangkalan Kerinci with nine communities across nearly 400,000ha of land. Over the course of the program, a significant reduction in burnt areas was seen from an unaudited estimate of 784ha of burnt areas in 2013 to 531ha in 2014 and down to only 53.55ha in 2015. This represented a reduction of more than 90% in burnt areas achieved, in direct correlation with FFVP efforts.

Last year given the continued threat of the dry season across the rest of Indonesia, the July-September fire season was prudently extended by APRIL to March 2016.

2016

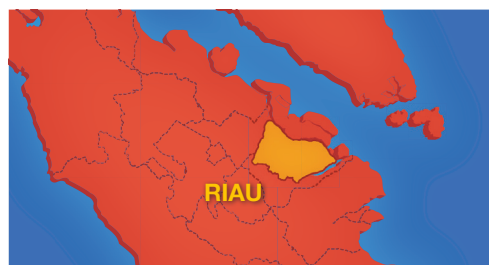
In 2016, APRIL then expanded the FFVP to cover 18 communities across approximately 600,000ha of land, an increase of 38%. The doubling in the number of communities covered saw an overall increase in the area of burnt land from 53.55ha in 2015 to 390.6ha in 2016.



Importance of the Kampar Peninsula’s geographic context

The FFVP takes place in the Kampar Peninsula which includes some 700,000 hectares of low-lying lands mainly comprised of peat swamp forests and mangroves. The importance of the Kampar Peninsula is that it is an illustration of the challenges of high value conservation sites which are inhabited by villages and communities. According to surveys undertaken by Scale Up, the livelihoods of some 33,000 people depend wholly or in part on the forests in the Kampar Peninsula and yet many NGOs and the Government of Indonesia are actively working in the area on wetland and forest conservation as well as that of endangered birdlife, tigers and biodiversity conservation. Since the 1970s, the majority of the Peninsula has been classified as logging concessions areas and licensed

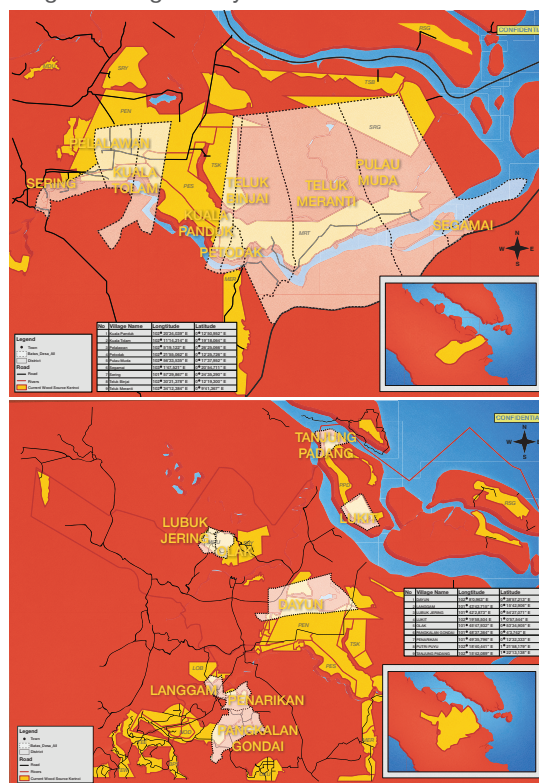
to a number of companies that have cut canals through the peat to assist with extracting felled timber. Without any proper and active water management, those canals contribute to the draining of this unique peat swamp ecosystem and thus make the area vulnerable to fire. Much of the forests have been heavily degraded by these operations, yet the area retains significant biodiversity. In such a contested area, only strong, well managed landscapes will avert fires.



Kampar Peninsula location.

With so many competing land uses and land claims, fires have been used as a means to clear land cheaply and establish ownership or to repel encroachment by challenging claims. In many instances, different levels of government can grant conflicting land claims and as such, give rise to destructive conflicts or the collapse of a shared conservation area due to illegal extraction. Detailed maps of community land use are lacking and shared lakes, waterways and customary rights have given rise to further complexity.

These are all very significant challenges to FFVP’s success and underline why the geographical context of the Kampar Peninsula is so important. If FFVP can help foster the long term stability of the Kampar Peninsula, it will be a case study in successfully establishing landscape management by responsible companies through working closely with communities.



THE FIRE FREE VILLAGE PROGRAM

Brief description

The Fire Free Village Program (FFVP) is Riau's first comprehensive fire prevention plan that seeks to prevent fires by addressing root causes collaboratively with the community. The FFV Program Committee agreed to five separate projects under the Program, specifically:

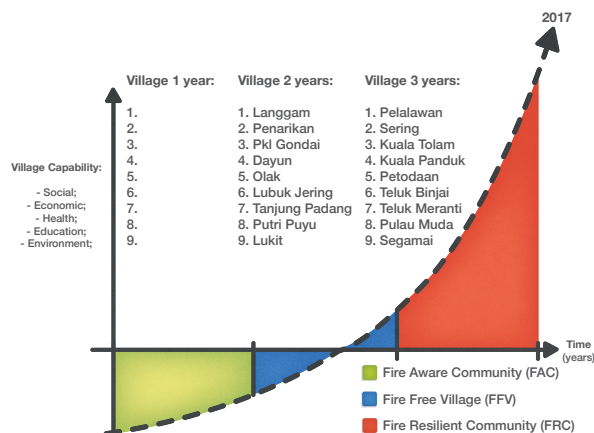
1. **No Burn Village Rewards:** An extension of the earlier Village Incentive Program that showed significant promise as a means of incentivizing communities to stop using fire;
2. **Village Crew Leaders:** A program to recruit individuals from local communities as fire prevention advocates and fire suppression specialists at the village level;
3. **Sustainable Agricultural Assistance:** Provision of a range of sustainable agricultural alternatives to fire for land management activities;
4. **Community Fire Awareness:** Development of a suitable range of community awareness tools that focus on the inappropriate use of fire and the impacts of burning, particularly health related;
5. **Air Quality Monitoring:** Installation of three Smoke Haze Air Quality monitors in 2015 with, a further four monitors purchased in 2016 for installation in 2017 and associated health information platforms.

Initiated by APRIL, FFVP is executed in collaboration with local NGOs: Blue Green (based in Pekanbaru) assisting with communications and community awareness; Laskar Alam (based in Pulau Padang) assisting with Fire Free Village awareness in Pulau Padang; and Kabut Riau (based in Pekanbaru) assisting with Fire Free Village awareness in other villages. FFVP is also supported by the local government, police, military and Riau's Disaster Mitigation Agency. In 2016, FFVP was expanded to include:

1. Fire Aware Community (FAC) to encompass earlier stage socialization, relationship building, school awareness program, and engagement before the village enters FFVP;
2. Fire Free Village Program (FFVP) and its five project areas as outlined above; followed after two years in FFVP, by villages graduating to the third phase;
3. Fire Resilient Community (FRC) which is a more flexible arrangement with a lower budget and lower level of engagement as communities develop internal capability.

This integrated three stage program is intended to focus on developing community capabilities in social, economic, health, education and environmental areas and creating a long term platform for a fire free future.

Developing Community Capability



Depicting the 3 stages of the program from Fire Aware Community to the Fire Free Village Program to the Fire Resilient Community and the expanded development of the community capability.

The success of the 2015 program and the challenges experienced by last year's fire season led to the expansion of FFVP in 2016, with APRIL taking the lead to create the Fire Free Alliance (FFA). The FFA is an alliance of some of the biggest agricultural companies including APRIL, Asian Agri, Wilmar, Musim Mas and Sime Darby, who openly share learnings and strategies to prevent fires and to develop village capacity for a fire free future. FFA was launched on 29 February 2016 in Jakarta and held four Panel Meetings in Indonesia and Singapore and two technical meetings in Riau over the course of the year. FFA has also created a new culture of data disclosure, issues sharing and collaboration among its members and has established a Secretariat (currently facilitated by CC) and a members' based information sharing web platform www.FireFreeAlliance.org.

REVIEW OF 2016 RESULTS

After the successful roll out of the 2015 FFVP with nine villages, 2016 saw some mixed results and many learnings. Key findings were:

1. Double the Villages and Significant Expansion of Fire Free Area

In 2016, the fire free area saw a doubling in the number of villages covered, from 9 to 18, and a 38% increase in FFVP land coverage compared to 2015. This continued the significant year-on-year increase in areas covered by FFVP Memorandums of Understanding (MOUs)—from 352,146ha in 2014, to 427,876ha in 2015, to the 592,080ha covered in 2016.

2. Larger Burnt Area as a Result of Expansion

While there was a notable increase in the total burnt area covered by FFVP MOUs in 2016, much of this occurred in only one community (Pulau Muda). The total burnt area in 2016 was 390.6ha, a 629% increase over 2015's 53.6ha. However 88.3% or 344.9ha of this burnt area occurred in Pulau Muda which is quite remote and where, once a fire has started, it is difficult to contain. On a positive note, however, this means that other fires only contributed 11.7% or 45.67ha of burnt area, across 18 villages.

3. Overall Improvements

With the exception of the statistical impact of the outlier Pulau Muda's burnt area in 2016, FFVP has, since 2013, played a major role in reducing burnt areas. In 2013, 1,039ha was burnt representing 0.3% of all areas under MOU; in 2014 the figure was 618ha or 0.14% of areas under MOU; in 2015, it was 53.6ha or 0.01%. In 2016, the total burnt area rose to 390.6ha or 0.07% of areas under MOU. However, if the anomaly of Pulau Muda is excluded, then FFVP in 2016 would have seen burnt areas in only 45.67ha across 18 villages and a total MOU area of 592,080ha, representing less than 0.0077%.

4. More Full Rewards, Fewer Zero Rewards

Of the program's 18 villages, nine villages received full rewards indicating no fires on their MOU areas during 2016. This was a significant improvement on 2015 when only three of nine villages were fire-free. On the other hand, only four of 18 villages (representing 22%) received half rewards which was down from the three out of nine villages (33%) in 2015. In 2016, five of the 18 villages (27.7%) failed to earn any reward, although, comparatively, this was an improvement on 2015 when three out of nine (33%) received no reward. Overall,

therefore, performance improved with a much higher proportion of villages receiving full rewards and a lower proportion receiving no reward.

5. Improving Over Time

Experience paid off in 2016 for second-year FFVP villages with five of them earning full rewards compared to only three in 2015. Only two second-year villages failed to get any reward, down from three in 2015. Two villages got half rewards down from three the prior year. Among the new villages, four received full rewards in their first FFVP year, two earned half-rewards and three earned no reward. For first year participants, Pulau Muda this was a good overall result. Unfortunately, Pulau Muda continued to be the perennial poor performer and has yet to win a fire free reward since its engagement in the program with 20ha burnt area in 2015, 11.54ha in 2015-2016, and 344.9ha of burnt area in 2016.

In 2016, FFVP leveraged the momentum of the 2015 haze to push for wider socialization across an area of nearly 600,000 hectares. FFVP widely provided the "carrot" for the No Burn Village Rewards in contrast to the strong messages or "stick" from the National Government which highlighted Presidential Decrees, moratoriums on peatland and the threat of imprisonment or large financial penalties. On the ground FFVP set clear achievable goals, established transparent responsibilities, and garnered commitment and endorsement from village and crew leaders. It also won support for agricultural development, awareness raising and socialization based on close engagement with MPA, community leadership and air quality monitoring. It was also apparent that the five FFVP projects were evolving and changing in priorities based on the level of adoption or individual needs or culture from village to village.

As such CC has also simplified the Key Performance Indicators (KPIs) used to measure the effectiveness and efficiency of these five FFVP project areas. The three KPIs we have focused on are:

KPI 1: Short-term contribution to the reduction in burnt areas and positive engagement with the communities

The first KPI measures the ability to engage villages with an immediate cause/effect proposition. This immediate and short-term engagement is a KPI of how quickly and openly embraced this program is by the local communities. Without strong, rapid engagement followed by positive adoption, any initiative would be bound to fail. This KPI looks at the relative contribution of the five different projects to the short term reduction in burnt areas and engagement with local communities.

KPI 2: Long-term community cultural shift, socialization, education and adoption of fire free alternative livelihoods

The second KPI focuses on the cultural and social changes resulting from the five FFVP projects and the longer term reduction in fire. It also looks at the ongoing maintenance of the success of FFVP in creating cultural shifts from burning to earning, and alternative livelihoods or education which will uncouple the association of land clearing by fires as a profitable long-term developmental strategy. Ultimately, it calls for a mindset shift and reaching a tipping point across the community so that people recognise burning as harmful to children, illegal and dangerous to the community, meaning that these old habits never return. This requires an irrevocable social step forward. This KPI looks at the relative contribution of the five different projects to the long-term community cultural shift, education levels and clear path to long term economic sustainability without the need for any burning.

KPI 3: APRIL's potential return on Investment

As a pilot, the successes from FFVP must be measured in a traditional way to provide shareholders and investment committees accountability for the allocation of APRIL's financial resources. The return on investment (ROI) can be measured in terms of reduced losses from burning, reductions in the suppression of fire budget for suppression of fire, better long term community engagement and other corporate social responsibility and community development measures which lead to investor, government, NGO and financial goodwill. This KPI looks at the relative contribution of the five different projects to the ROI on APRIL's investment.

REVIEW OF PROJECT 1 - NO BURN VILLAGE REWARDS

Hypothesis: Would there be continued interest and effectiveness in 2016 after the success of the 2015 rewards to unify and galvanize a message across a community? Communities burn because of land disputes and as a cheap and effective means of land clearing; will the ongoing rewards be sufficient incentive to continue compliance with no burn goals?

Budget: IDR 1.9 bill. (USD 165,000) where a full reward being IDR 100 mill. (USD 7,614) and half reward being IDR 50 mill. (USD 3,807).

Actual: IDR 1.175 bill. (USD 97,917) was distributed in 2016.

Historic: Reward distribution was up 286% from 2015 where IDR 450 mill. (USD 37,500) was awarded with three full rewards, three half rewards and three zero rewards.

Budget 2016 - \$165K USD.

Actual 2016 - \$97,917 USD.

Historic 2015 - \$37,500 USD.

Project Manager: 2016/2015 - Sailal Arimi



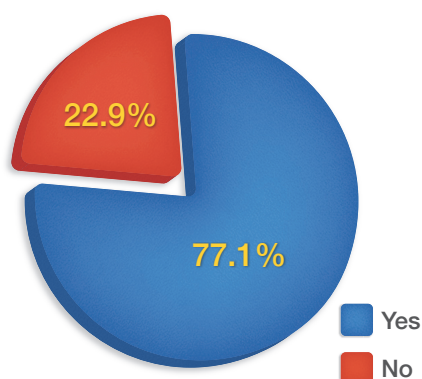
In Pelalawan with the Village Leader Edi Arifin, Crew Leader, and Craig Tribolet of APRIL showing the fire office construction with the half reward they achieved this season after a full reward last season. This reward and the ongoing commitment and success also serve as a symbol of their commitment to being fire free.

Village questionnaire survey feedback: Over 77% of respondents were aware of FFVP and this high level of awareness also carried into the specific FFVP projects with 75.7% aware of the No Burn Rewards and only 24.3% unaware of the rewards. Particularly because of the virality of the reward concept, it is not surprising to see that this was talked about in the villages. Interestingly, respondents from villages that have been with the program for two years had a lower awareness of FFVP (67.6%) than villages that had joined the program this year.

This may be a result of increased awareness of the new program owing to the 2015 dry season impact or because of improved FFVP awareness campaigns for

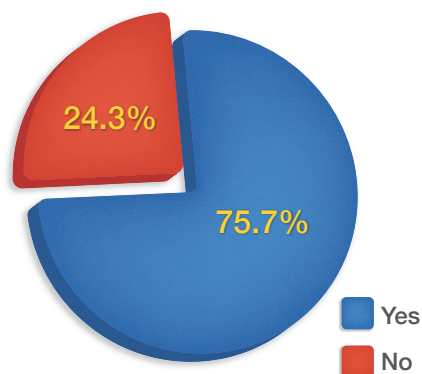
new Year 1 villages. This trend for lower awareness of specific programs such as No Burn Rewards continued for year 2 village respondents registering only 64.8% awareness. It appears year 1 villages had nearly a +10% awareness level compared with year 2 villages. This will provide an interesting baseline for 2017 surveys and village awareness measurement.

FFVP Awareness



Awareness of FFVP within a random 140 questionnaire sample was high at over 77%.

No Burn Rewards



Awareness of No Burn Rewards was high although was lower in Year 2 village respondents.

Results: The results confirmed a continued strong response to the rewards. Across all 18 villages, nine villages had no fires on their MOU areas during 2016. From a 33% no fire rate in 2015 up to 50% in 2016, this was a significant result. Five of 18 villages or 27.7% of villages failed to receive any reward, and whilst this was numerically higher than 2015 when three of nine or 33% of villages failed to receive any reward, it was lower in percentage terms. By scaling the number of villages from 9 to 18, this effectively doubled the potential payout assuming all villages were successful. It also increased the defendable land by over 200,000ha with effectively the same APRIL manpower coordinating and operating the project. With nine of the villages being in their 2nd year, it was to be hoped that success rates would be greater than the prior year as awareness, socialization and FFVP systems would be more entrenched.

Village	Total Area	Burnt Area					Reward 2016
Desa	Total MOU Area (Ha)	2013	2014	2015	2015 2016	2016	
Pelalawan	21,214	7	15	0.5		1.71	50%
Sering	12,742	50	30	11	2.67	-	100%
Kuala Tolam	29,149	100	30	0.15		0.80	50%
Teluk Meranti	159,286	200	83	21.2	0.07	-	100%
Teluk Binjai	67,771	70	30	0.7	0.25	-	100%
Petodaan	5,809	15	10	-		-	100%
Kuala Panduk	16,321	122	87	-		-	100%
Pulau Muda	112,347	175	83	20.0	11.54	344.90	Zero
Segamai	3,237	300	250	-	41.42	10.50	Zero
Langgam	7,561	10	7	4		1.83	Zero
Penarikan	12,158	70	20	25		-	100%
Gondai	36,918	500	700	1500		0.33	50%
Tasik Putri Puyuh	1,992	10	60			-	100%
Tanjung Padang	8,418		1000	500		-	100%
Lukit	15,656		800	7		5.00	Zero
Olak	9,526	151	50	15			100%
Lubuk Jering	7,685					0.50	50%
Dayun	64,290	210	235	165		25.00	Zero
	-	1039	618	53.6		390.6	
Total area 2014	352,146	0.30%	0.14%	0.01%		0.07%	
Total area 2015	427,876						
Total area 2016	592,080						

■ 1st year FFVP villages
■ CC interviewed & or visited

Thoughts on and benefits of the Village Rewards Program were:

1. “Conversation opening”: Offering a reward especially for new villages in their first year of engagement continues to prove itself to be a real conversation opener and engagement tool. This allows APRIL to come to the table with all villages with a tangible, realistic and immediate offering.
2. “Carrot and stick”: The rewards program continues to provide a simple, tangible, proven “carrot” in contrast to the harder and punitive “stick” approach by government, police and army.
3. “Wedge effect”: Rewards proved to be the thin edge of the wedge, as once a village leader adopts

the rewards challenge, they also implicitly sign up for FFVP and once awareness, socialization, crew leaders and the other elements of FFVP start gaining traction, it is very difficult to remove the awareness and unlearn the education. Hence FFVP creates a socially binding political pressure and awareness all triggered by the adoption of the rewards. So even if rewards are removed in the future, it would not undo the years of engagement and socialization.

4. “Political gamble”: Village leaders, by engaging in the rewards and FFVP, have essentially backed the fire free movement and the fire free stand. This increases their political risk as well, in that they have represented to the community that they will access this funding and, in the event that they

fail to achieve the reward, may be seen as failing to fulfill a political promise with the associated political ramifications. However, should the reward be achieved, then they are seen as delivering a communal victory.

5. Improving success rates: New 1st year villages participating in FFVP had a higher rate of success compared to 1st year villages in 2015. 2016 saw four villages receive the full rewards, up from three villages in 2015. This could be attributed to improved FFVP processes for bringing on board new villages. In both 2015 and 2016, three villages failed to receive any award.
6. Improving reward results for 2nd year FFVP villages: During the 2016 fire season, 2nd year FFVP villages improved on prior year results and also outperformed 2016's 1st year villages, indicating momentum among 2nd year villages. Five villages won full rewards, which was up from three villages in 2015 and only two failed to get any reward down from three villages in 2015.
7. "Visible rewards": As the rewards are not in cash but are in infrastructure and equipment (see photo on the right), the Village Leaders share success in a very visible way. Some had asked for a local market to be built, security booths, roads and bridges, community hall, mosque and all in very visible locations. Village Leaders and communities are all very proud of their wins and are using these as symbols of commitment and visible signs to endorse a fire free future. Furthermore, it avoids the kind of controversy that can be associated with cash rewards or payments.



Currently the road is used as the market place resulting in traffic jams every Tuesday. However, once complete the market place will provide a stable trading platform that is a highly visible reward for FFVP when people come every week.



Reward for Kuala Tolam is this marketplace structure, this is a very visible strong use case of the reward. It was partially built with last year's reward but was incomplete so this year will be finished as a market place using the half reward achieved.



Village leader Edi Jasman and Crew Leader Helmi in uniform surveying the incomplete reward from last fire season. This year they will only receive a half prize as there was a small <1ha fire on their land. This was disappointing as last year Kuala Tolam won the full prize.



Reward for Tanjung Padang is the bridge and roadwork being fixed behind the sign. As a new village, the reward really worked for them as they won it in their first year. This built on the momentum as there were bad fires were in 2014 when 1000ha was burnt and lost homes as well as in 2015 when an estimated 500ha burned, scaring the villagers.

Recommendations:

1. Equitable distribution of rewards: The following variables influence the levels of difficulty and potentially should be considered for more equitable distribution of rewards in recognition that some villages have significantly larger areas to monitor, or have different accessibility and fire risks as they may be by river banks or at a crossroads where transient populations might start fires. Another important factor is clarity around land claims and the fact that government land often is unmanaged and unmanaged land is high risk. CC recommends maintaining the current reward structure but potentially offering greater assistance and a bonus reward system to recognise especially challenging situations.
2. Study successes: It was encouraging to see that Sering finally received a full reward after two fires seasons with no rewards and that the biggest village Teluk Meranti at 159,000ha was successful in winning a full reward this season after no reward in 2015 and a half reward in 2015-2016. We recommend a further study of FFVP implementation in these two villages to look for more local and specific reasons which perhaps could be replicated elsewhere for this year's successes.
3. Empowerment and autonomy: Villages have the freedom to choose their own reward prizes and localize their own strategies which enhances the sense of ownership of their programs. In first-year villages, APRIL staff met community leaders several times and also had a number of meetings with leaders of second year villages. This meeting

process on average took 3-4 months to help village leaders identify root causes of issues, and local problems, assess how fires might be prevented and establish how, in the event that they break out, fires could be suppressed. We would recommend that village leaders and villagers be given the opportunity to learn from each other and share stories and learnings, potentially through an open day or event for awarding the winners rewards in Kerinci, Pekanbaru or in one of the winning villages.

4. Some villages believe that the reward should be additional to any transport and implementation costs involved with the actual reward (e.g. If they get a Stryker pump then they currently must pay for the additional transport costs). We would recommend that quotes be provided with all costs included or the price and cost upon pick up or delivery for full transparency.
5. Is two years long enough to reach full socialization and what happens next year when rewards are removed for nine of the villages? This will be a very interesting data point to determine the importance of the reward for reducing fires and how the program has resonated. We recommend that thorough review of the "graduating villages" be performed.

Quote on the value of Village Rewards by Dr Eta (Village Doctor) from Teluk Binjai, 31 years old:

"In the smoke season 2015, more people in the village visited the Puskesmas (the village hospital) than any other season. They had asthma, cough, and flu. Most of them are children. One of FFVP Rewards was to build the road to the Puskesmas and it is very useful for the village, because the road is from clay so if it is rainy will be flooded, so slippery and dangerous. So many patients had fallen there. It was so sad, when they want to get cure and getting worse because they also get injury because of falling on the road."

Project 1: Execution and Impact of No Burn Village Rewards

KPI	IMPACT	EXECUTION
<p>Short-term contribution to the reduction in burnt areas and positive engagement with the communities.</p>	<p>HIGH</p>	<p>Short-term impact of rewards remained high for 1st year villages, it is a key door opener and engagement device especially with so much tangible value delivered over the last three fire seasons.</p> <p>However the impact of rewards seemed to diminish for 2nd year villages where the socialization was already strong and the first impression and excitement had grown familiar. However, as some of the prior year rewards had been unfinished e.g. marketplace or building, a second reward win provided a political tool for village leaders to engage their community in a common pursuit of further prizes to complete the infrastructure.</p>
<p>Long-term community cultural shift, socialization, education and fire free alternative livelihoods.</p>	<p>MEDIUM</p>	<p>Next year when nine villages will graduate from the no burn rewards program, we will see the long term wedge effect to shift a community to fire free socialization. However despite 2nd year villages seeming to be now familiar and possibly less excited by the rewards, the improvement of the 2nd year village cohort from three full rewards last year to five full rewards this year shows that there continues to be momentum and commitment to FFVP. Here we suggest that the no burn reward has medium effectiveness as a tool for long term community cultural shift but that some rewards which are long term in nature such as roads, marketplaces and new buildings can act as long term reminders and also ongoing economic revenue generators by providing better logistics for exports or a marketplace for produce sales.</p>
<p>APRIL's potential return on Investment (ROI).</p>	<p>HIGH</p>	<p>Given the improved success from three of nine villages to 9 of 18 villages getting full rewards (or a 50% rate up from 33%) it is clear that FFVP is on a positive trajectory. As USD97,917 was distributed in 2016 for an area that was nearly 600,000ha, this is nominally 6ha per USD 1, so APRIL's potential ROI from the engagement, awareness, press coverage and word-of-mouth to drive prevention from this initiative was deemed to be high.</p>
<p>OVERALL</p>	<p>HIGH IMPACT</p>	

REVIEW OF PROJECT 2 - CREW LEADER

Hypothesis: In 2016, how could APRIL innovate beyond its community engagement via crew leaders? How have the crew leaders benefited from the media focus on the 2015 haze and the imprisonment of fire starters? Have joint patrols with police and army strengthened the legitimacy of the enforcement by crew leaders and village leaders? How have notices, uniforms and FFVP branding grown beyond just crew leaders? Could mobile phone chat services also help improve efficiency and scalability for managing double the number of crew leaders? How could we improve the crew leader's coordination with the volunteer fire team of the MPA and the village leaders?

Budget: IDR 1.002 bill. (USD 83,550) approx. IDR 65 mill. (USD 4,948) is paid per village.

Actual: IDR 946 mill (USD 78,837) was distributed in 2016.

Historic: Up from IDR 386 mill. (USD 32,167) in 2015 which is + 245% from 2015.

Budget 2016 - \$83,500 USD.

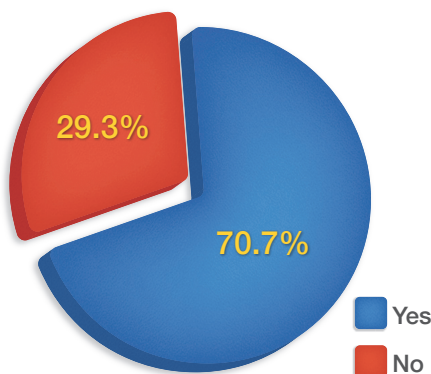
Actual 2016 - \$78,837 USD.

Historic 2015 - \$32,167 USD.

Project Manager: 2016 Sailal Arimi/2015 Craig Tribolet.

Village questionnaire survey feedback: The villagers surveyed were asked about their understanding of the role and importance of the Crew Leader Project. Crew leaders had an awareness level of 70.7% although the awareness in Year two villages was lower at 56.3%. Given that 75.7% of villagers were aware of the No Burn Rewards it is a testament to the red shirts, branding and engagement of the Crew Leader that they also had such a high level of awareness compared to the community's more tangible No Burn Reward.

Crew Leader



Awareness of Crew Leader was high at over 70.7%.

Results: Building on a strong 2015 platform where the nine villages in their 2nd year of FFVP had trained and experienced crew leaders, the next challenge was scaling the management of these crew leaders to double the number of villages.

Of particular interest and effect was the use of mobile phone apps for sharing of photos of potential burn areas or to check in on their daily socialization rounds and their current location. The crew leader's effectiveness in 2016 was enhanced by having a local member of the community in uniform on the APRIL payroll as a crew leader to continue to do check-ins, patrolling, liaise with the MPA and build trust and commitment from the community to not burn. The high level of smartphone ownership creates new channels for community engagement and early fire detection.



Crew leaders are corresponding with APRIL manager Sailal Arimi using photos, daily check-ins and communication via WhatsApp and other mobile based SMS check in services.



Joint patrols were performed in over 50 villages where a convoy of police, army, local government, village leader and crew leaders would visit a village, make speeches about the punishments for fires, show banners and rally the press and the local community.

APRIL strategically organized joint patrol convoys of cars combining local government, police, army and village and crew leaders. This was a high cost, but high impact "surge" strategy emphasised the seriousness of the issue, the punishment for burning and the importance of the program. The media's interest in the patrols provided strong communications and PR support and a highly visible "call to arms" response to the President's call to stop fires.

MUSIM KEMARAU

RAPP dan Polisi Ajak Warga Tak Bakar Lahan

21 Januari 2016 - 10:06 WIB



water point: Kapolsek Logas Tanah Darat AKP Karlos meninjau water point dan embung yang disiapkan RAPP untuk melakukan pencegahan kebakaran lahan dan hutan, sebelum lama ini. Rapp For Riau Post

PEKANBARU (RIAUPOS.CO) - Untuk mengantisipasi musim kemarau yang diprediksi terjadi pada Februari hingga Maret 2016, PT Riau Andalan Pulp and Paper (RAPP) gencar melakukan sosialisasi larangan membakar lahan dan hutan, kepada masyarakat di desa yang berada di lima wilayah operasional perusahaan dengan menggandeng pihak kepolisian setempat.

Press was supportive of the joint patrols and subsequent coverage helped increase the standing and legitimacy of the crew leader with the police, army and government endorsement of their work.

While the joint patrols therefore had an element of “shock and awe”, we were unable to measure the effectiveness of the 50+ villages visited as there was no mapping of which villages were visited, how long the patrols remained and who they reached. There was no before and after benchmarking of perceptions linked to these patrols.

These joint patrols were possibly only single use instruments to spotlight the gravity of the issue. Joint patrols were cited by two village leaders as being supportive of their community messaging so, if there are no such patrols in 2017, it will be interesting to see if this is reflected in fire statistics.

Media coverage of the court’s enforcement of the fire free laws also assisted the crew leaders as the legal ramifications of burning and the imposition of several jail sentences appeared in local newspaper reports highlighting the real danger of punishment.

Quote from Alfian (Village staff) from Kuala Tolam, 33 years old:

“There are no more fires since the rule from the Riau Police. The community is afraid to go to jail.”

Quote from Khairun (Farmer) from Pangkalan Gondai, 36 years old:

“I don’t burn anymore as i am afraid to go to jail. If i was in jail, i couldn’t earn money for my family.”

Berhasil Tangkap Pelaku Pembakar Lahan, Dua Aparat dan Satu Ketua RT Dapat Penghargaan

Rabu, 13 Juli 2016 08:15



ILUSTRASI- Lokasi Kebakaran Lahan dan Hutan (Karlahun) di Desa Ridan Permai Kecamatan Bangkinang berada sekitar pemukiman warga.

Laporan Wartawan Tribun Pekanbaru : Fitrah Aidil Akbar

TRIBUNPEKANBARU.COM, PEKANBARU - Dandim 0313/KPR Letkol Kav Yudi Prasetyo, Selasa (12/7/2016) memberikan penghargaan pada dua aparat dan satu ketua RT di Desa Kubang Jaya.

Press coverage of the jailing of the fire starting person also helped convince the villages of the seriousness of the fire ban and helped socialization and crew leaders.



The enthusiastic crew leader Helmiin and Village Leader Edi Jasman of Kuala Tolam.



Crew leaders have supporting infrastructure like this fire free village stand by the road.



Close up of the FFVP branded infrastructure en route to Kuala Tolam, visible on the side of the road.



Use of the FFVP branding by contractors to show the brand awareness and recognition is gaining momentum and adoption in the villages beyond just the Crew Leaders red uniforms.



Pak Rizal, Crew Leader of Tanjung Padang (also son of the Village Leader Abu Sofian), printed out these strong "No Fire signs" which he put up on many buildings along the route.



We randomly saw these posters along the main road which contributed to the socialization.

The selection process for village Crew Leaders was to nominate two or more candidates from which APRIL would interview and select based on their communication skills, access to leadership, and attitude towards the position. Crew Leaders were often closely aligned to Village Leaders and this did seem to be a positive issue in terms of access and commitment to their mission. The Crew Leaders all received training with local police in basic fire suppression and were actively working in their village communities from July 2015 for the 2nd year villages and from June 2016 for the 1st year villages.

One interesting consideration would be to see how Crew Leaders can continue to add value to FFVP in the non fire season perhaps via the Agricultural Assistance project.

In 2015, there were recommendations for greater media focus on repercussions and punishments representing the "stick" to provide balance to the "carrot" of no burn rewards. This led in 2016 to more publicity of prison sentences, the utilization of the joint patrols and the cooperation among crew leaders, police, army and government. This has definitely been a successful initiative. Furthermore with visibility of FFVP branding on clothing and the ongoing addition of fire free branded infrastructure, such as watch towers, signs and roadside shelters, awareness has continued to entrench itself in the community. In addition to awareness initiatives, however, some Village Leaders and Crew Leaders had mentioned the need for better "hardware" meaning fire suppression equipment capability, training support for village fire teams (MPA) and donations of firefighting equipment.

This led to a program developed and led from its inception in 2015 by Fire Prevention Manager, Sailal Arimi. His local network, strong interpersonal skills and use of mobile phone technology have seen him become a highly effective, coordinating and mobilizing force. It has become clear that effective and regular

active communication are at the very heart of the success of this Crew Leader network and that 2016 has been an exceptionally successful year for the Crew Leader element of FFVP.

Recommendations:

1. Allocate extra Crew Leaders to some areas: The need for Crew Leaders varies dramatically depending on land area, population and other fire risk factors. Additional Crew Leaders, full or part-time, should be considered for villages with a history of fires or where more attention is required to mitigate other fire risk factors.
2. Establish a Crew Leader Alumni: Once a village and its Crew Leader go beyond the 3rd year and become graduates of FFVP, we could bring them together to form a committee which would effectively be a grassroots movement to run FFVP and make operational recommendations. APRIL could continue to provide training, receive progress reports, and set KPIs for these teams; longer term funding could potentially be sought from donors and other sources.
3. Crew Leader smartphone and mobile communication groups: APRIL could connect all Crew Leaders in WhatsApp groups or other smartphone applications to ensure they are equipped to share information, learnings, and problems as well as checking into the group daily with photos to build a culture which makes them all accountable to each other and their village and not just to APRIL. This shifts the Crew Leader network from a 'hub and spoke' system to a 'network cluster' which would build the camaraderie needed for longer-term commitment and management of FFVP.



This is an example of a random roadside building which had one of these "No Fire" signs posted outside of the Tanjung Padang village.

Project 2: Implementation and Impact of Village Crew Leaders

KPI	IMPACT	EXECUTION
Short-term contribution to the reduction of burnt areas and positive engagement with the communities.	HIGH	<p>It is highly effective to have a local resident engaged directly with FFVP and APRIL senior management. Having on the ground access via WhatsApp or SMS and having a local villager continually highlighting penalties and ramifications, wearing the uniform, door knocking, posting flyers and tying into the FFVP wider program has high short term-impact and raises awareness.</p> <p>Crew leaders when bolstered by the joint patrols, legitimized by the work with police, army and village leaders and media coverage of imprisonments for offenders became effective and respected grassroots representatives of FFVP.</p>
Long-term community cultural shift, socialization, education and fire free alternative livelihoods.	MEDIUM	<p>The level of contribution to a truly long term shift in community awareness, culture and a fire free commitment remains to be seen; however after two years and three fire seasons there is clearly a strong level of understanding of the work Crew Leaders do and their importance to the fire mission. For this reason we would currently assess the long term positive impacts to be medium. This network of Crew Leaders can also potentially leverage their positions in the community by becoming involved in promoting long term alternative livelihoods initiatives and other grassroots based campaigns. Similarly there could be an education program provided for Crew Leaders to learn business skills and help local village growers sell their wares by tapping the crew leader network and relationships.</p>
APRIL's potential return on Investment.	HIGH	<p>USD 78,837 was distributed in 2016 across 18 crew leaders in 18 villages or USD 4380 per village/per crew leader. This is a very low investment for a high ROI.</p>
OVERALL	MEDIUM TO HIGH IMPACT	

REVIEW OF PROJECT 3 - AGRICULTURAL ASSISTANCE

Hypothesis: If fire is the quickest and cheapest way to clear land and land clearing is required for income generation, is it possible to find alternative ways of land clearance other than fire and are there fire free income generation methods? How can APRIL provide a platform for success but not be paternalistic and create dependency and a handout mentality for the communities that they work with? Is there appropriate equipment, skills and expertise and how do we foster a more entrepreneurial mindset within the local community? Can we potentially create support for an earn not burn strategy?

Budget: IDR 2.181 bill. (USD 181,750).

Actual: IDR 1.553 bill. (USD 129,453) was expended in 2016.

Historic: This was an increase of 21% from IDR 1,287 bill. (USD 107,241) in 2015.

Budget 2016 - \$181,750 USD.

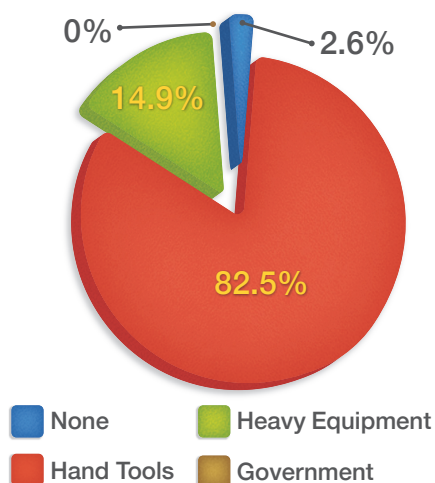
Actual 2016 - \$129,453 USD.

Historic 2015 - \$107,241 USD.

Project Manager: 2016 Sailal Arimi/2015 Achmad Johnasyah.

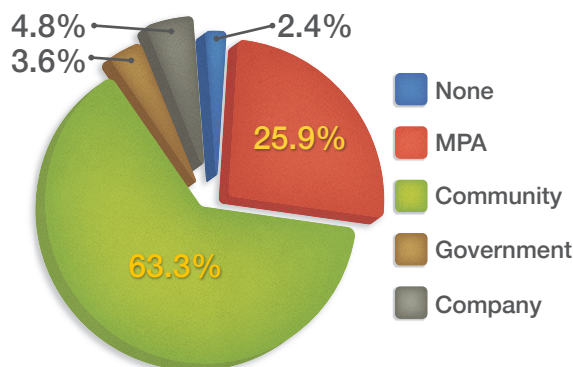
Village questionnaire survey feedback: The issue of Agricultural Alternatives revealed some interesting perceptions in the villages where 82.5% of respondents considered hand tools to be the main way to cultivate the land. Only 14.9% responded "heavy equipment". Similarly when surveyed on what happens when a fire breaks out, 63.3% of respondents said that it was the community who suppressed the fire, 25.9% believed it to be the MPA and only 4.8% thought it was the company. There is a strong sense of self sufficiency and self reliance and nearly 70% believed that the village had adequate suppression capability.

Ag. Alternatives



When surveyed on ways to clear land without fire, 82.5% of respondents responded Hand Tools.

Suppression



When surveyed on what happens when a fire breaks out, 63.3% of respondents said that it was the community who suppressed the fire, 25.9% believed it to be the MPA and only 4.8% thought it was the company.

Results: Agricultural Assistance is of great importance for the long-term shift to a fire free future. However, this appears to be the weakest of the five FFVP projects with slow progress and low impact for both communities and for APRIL. There are many systemic challenges and learnings:

1. Legal ownership challenges: This is the single biggest obstacle to providing the promised land clearance. Before land clearing assistance can be provided by APRIL, due diligence regarding land ownership is required from three levels of government. This has hindered APRIL's ability to meet promised targets. The problems include multiple claims of land ownership for the same parcel of land, overlapping concessions and restrictions on land clearing activities, such as not clearing 200m from a river. Long-term, transparent land use maps and clear property ownership legal frameworks are required.
2. Availability of appropriate tools for land clearing and the community approach: Current fire issues are rooted in simple economics that it is far cheaper to clear land with fire than mechanically. In 2015, many challenges were encountered with the deployment of incorrect equipment (e.g. Large scale excavator PC-200, PC-100) which were far too heavy and ineffective for such small community and individual smallholder plots. So in 2016, the company recognised that most plots were less than 3ha in size and could be prepared with hand tractors. APRIL therefore provided hand tractors to all participating villages; however, in the field, including on a trip to Kuala Tolam, it appeared usage was very limited and that the hand tractors were not being appreciated or utilized. In fact, there were complaints that they could only be used at specific times of the year and required prior land preparation. The gifting of these tractors to the villages may have created a sense of entitlement coupled with a lack of understanding of a very valuable and useful tool.

One solution may be to recall these tractors and instead establish a system of booking usage of the tractors in advance to create a better appreciation of their value to the communities.



Crew leaders learning how to use hand tractors.



Demonstrations in the field of the hand tractor to prepare the land for agricultural assistance.



Ceremonial gifting of the hand tractors, here Sailal Arimi to Desa Pulau Muda.



Land clearing by manual hand tools such as axes and saws provided by APRIL were evident in Kuala Tolam and it didn't require fire. This was encouraging; however, it was only a small area and the hand tractors had not been seen to be utilized.



Demonstration plot for non fire corn growth at the APRIL Mill Headquarters for the Community Development. Training to grow without burning should definitely be utilized to train the villagers who are burning for traditional corn crop.

3. Changing pre-existing traditional and cultural practices which use fire: We found that many communities still believe that fire is required to prepare and fertilize the soil for planting. This was particularly observed in the villages around Segamai and Pulau Muda which had the biggest fire constituting 88% of the total burnt area in 2016. Pulau Muda is one of the largest areas with a total 112,000ha and being one of the most remote areas, it is clear that FFVP needs to adapt to keep them engaged and fire free. Upon meeting with Pak Rustam the village leader from Pulau Muda, he was adamant in his position that the rewards were less effective for his village because of the cultural belief that corn needs burning to grow well. Both Pulau Muda and Segamai, are convinced that corn needs to be burnt to work especially as a Segamai community-led trial to grow corn without burning was unsuccessful. As such, perhaps the reason Pulau Muda has failed to earn any reward for the last three seasons is cultural or historic rather than down to lack of FFVP implementation.

When asked about the fires, the village leader Pak Rustam suggested it was an accidental cigarette butt that caused the fire and crew leader Marzuki said that they did not know who was responsible. Given the size of the area burnt, the village leader claimed there was an inadequate access to water holes (holes dug by a large scale digger to provide access to the water table for fighting fires), and once the fire started they had no ways of stopping it and it simply burned through. Later on an aerial survey of the area did not find any new plantings, which lent credence to his proposed story. When the most recent fire season had just ended, the village leader was frustrated by not winning a prize in any of the three seasons in which his village had participated and indicated that he planned to leave the program. This was most likely emotional reaction to the disappointing result of 345ha burnt. However, having promised his community a reward but not received one in three successive fire seasons it is likely that he is suffering politically. However it does raise the question as to what to do if the village never wins a prize and then graduates to the Fire Resilient program where there are no prizes offered?

Segamai was also unsuccessful for the second fire season with 10.5ha of burnt land. However, given that 2013 had an estimated 300ha and 2014 an estimated 250ha of burnt land, this actually was an improvement on the 41.42ha in 2015-2016. If there potentially could be a prize for effort, then Segamai would be a contender.

With both these villages the cultural belief remains burning the land is the only way to effectively grow their staple crop of corn effectively making the burning of the land at a far higher priority than any community reward. So whilst villages that did not achieve the full reward (either half or no reward) were disappointed, often there were more complex and embedded reasons for failure.

Furthermore, in no instance did the village leaders or stakeholders interviewed feel any resentment towards the company but rather were disappointed in their own community or saw it as the careless action of a non local or even of the government for creating punishments and laws without offering assistance.

When APRIL included a question in the survey on why people still used fire, 17.1% said there was no alternative but 2.1% said because it was good for the soil. In the event that this influential 2.1% saw the trade off between starving or burning, then perhaps the solution is to prove that fire is not needed for soil preparation.

Carbon Conservation recommends that a non fire corn pilot be performed with community engagement in Segamai or Pulau Muda to show corn growth without fire.

4. How much assistance is too much assistance?: It was concerning to see indications of complacency and risk of dependency from the village leaders when asked about agricultural assistance. Indeed APRIL could be breeding a sense of dependency and a fear or failure by providing too much assistance through its CSR Community Development program, its FFVP Agricultural Assistance and its provision of agricultural recommendations to University of Riau staff and students. Is APRIL providing too much assistance?

APRIL, in the course of its Agricultural Assistance, has provided free hand tractors, highly educated community liaisons with free seeds and also University expert advisors from 2015 to provide guidance and advice in the last two years. However, it seems as though everything is coming to these villages for free and as a result they have remarkably high expectations. Such expectations among village leaders were encapsulated by a conversation with Village Leader Edi Arifin of Pelalawan. When asked about growing more mangos and providing these mangos for sale to local and even Singapore markets he responded:

“We would be happy to grow for you, but we would appreciate if you could provide the seeds, some wages and also guarantee the price and quantity for buying so we don't have any risk or losses.”



Mangos offered in Pelalawan.

FFVP might need to reconsider how it offers to assist and incentivize FFVP village. Already to several Fire Free Alliance (FFA) members, No Burn Rewards is a step too far and they have decided against offering these rewards. It seems that FFVP's Agricultural Assistance by being overly paternal in its support and instruction could be inadvertently breeding dependency by villages.

Another example was seen in the village of Tanjung Padang where the APRIL Community Development Team has had a strong influence in recommending pineapples be planted, helping with land clearing and procurement of seeds, and even in answering questions posed to the village leader.

An example of this was seen in Kuala Tolam where even next door to the Village Leaders offices there were birds nests that seemed well populated and noisy and where the next door home seemed very well appointed with new motorcycles and amenities. However, the Village Leader and Crew Leader seemed to have no knowledge or not seem to see the potential value to work with or learn from and emulate their neighbor's success. It raises red flags for the effectiveness of the Agricultural Assistance program in breeding and educating entrepreneurship and whether it should be based on a structure to encourage more self help and independent entrepreneurship by the villagers.



As last year, birds nests for swallows with nests sold to Traditional Chinese Medicine owners continued to be widespread and popular and there were clear examples of success.



This was the bird nest next to the village leader's office where the owners of these birds nests lived in houses that were noticeably better constructed, had better motorbikes and amenities.

5. There is so much opportunity for agriculture, but palm oil is the most profitable baseline: As one surveys the landscape, it is lush with green and rainfall is plentiful, there is absolutely so much opportunity for agriculture. Per the photos on the next page palm oil still is the most profitable revenue generator. However, it requires scale to be viable as a livelihood.
6. Sales, branding, marketing, and logistics support to access markets: There are so many ways of developing agriculture in the surrounding village areas. However, the support most required seems to be in getting the villages connected to markets, helping generate demand and sales, marketing, and creating a premium organic and local brand.

At the Pelalawan pilot site, one encouraging thing was that women were grouped into different teams and worked communally. This was a strong community bonding exercise that builds greater socialization for the Agricultural Assistance.



Palm oil is still a clear winner in terms of economic returns on time and agriculture.



When compared to palm oil, the subsistence farming represented in the photo on the right shows the diverse garden containing cassava, chili, lemongrass, pineapple and even chickens. However, the ability to scale and monetize is no match for the palm oil crop which is above on the left.



Demonstration program at Pelalawan with a mixed garden staffed admirably by the village women in photos below. However it does not seem to have focus on scaling and exporting even if the quality of the crops is clearly very high.



Local women farming kang kong which grows well, selling for \$10-14 in Singapore.



"Fire Free" products like Kang Kong which is a popular seasonal green vegetable in Asian cooking; Carbon Conservation recommend higher value crop.



Cucumbers again are \$1-2 for 2 in FairPrice in Singapore while Kale sells for \$10-14.



In the burnt areas, the community planted pineapples 2 months ago and they are taking root, Pak Abu Sofian the Village Leader (in the centre) said he planted 100 of the pineapples in this 0.5 hectare area with his community and only took a few days to plant.



All the workers were village women and it would be great to see if this community experiment could be scaled and connected to a narrative, brand and market.



Honey is a fantastic potential initiative similar to the birds nests especially given that it doesn't go off, is easily transported and very high margin for less work.



Mangos were abundant in many trees on the property of the Village Leader of Tanjung Padang, it is startling how lush and fertile this land is. He said he only used them for the village as the local market is not easily accessible but this could be overcome with some entrepreneurship as there is boat access.



Honey is a great potential pilot for some villages that could generate good returns for Riau. With a big Chinese population in Singapore, a pilot based on the New Zealand honey industry which commands huge premiums to Chinese buyers should be possible and if this is successful, could be a direct partner product to birds nest which already has distribution channels.



On site at the APRIL Mill, there are extensive training grounds for the Community Development Team to demonstrate Agricultural Assistance and should consider how FFVP, RER and CD all coordinate their efforts as all seem to be chipping away at the same problem.

7. Staffing and turnover: One cause of the slow progress of the FFVP Agricultural Assistance project was staff selection and turnover. APRIL lost two field staff and has acknowledged that management of this project has been inadequate. This Project is supposed to have additional team members and work with local NGOs to help liaise with local community decisions in 2017, and this has been promised from the last review in mid-November 2015. A starting point could be in connecting to the network of Crew Leaders and potentially recruiting another person or an “agricultural assistance leader” from the village or combining efforts with the APRIL Community Development team which is a separate budget and division.

8. Whole of company approach to Agricultural Assistance: It seems that APRIL could review its approach to FFVP Agricultural Assistance as it intersects with its Community Development budget and also some of the community development it is doing with CSR and its Riau Ecosystem Restoration (RER) project. By combining resources and planning a “whole of company” approach, better outcomes might be achieved for all teams. An example of this was the 2015 Seed Fund of USD 500,000 which was designed to be repayable through a microfinance zero interest loan allocation but which did not get implemented in 2015 or 2016. This could be a fresh new way for villagers to learn entrepreneurial skills and especially foster women’s entrepreneurship, as there is extensive research showing how much more successful women are in micro loan repayment.

Recommendations:

1. Create Agricultural Pilot for “Non Burn Corn” in Segamai and Pulau Muda: Recommended that a “Non Burn Corn” pilot be performed with community engagement in Segamai or Pulau Muda to show corn growth without fire. Both these villages culturally seem to believe that burning the land is the only way to effectively grow their staple crop, Placing their “need” to burn at a far higher priority than any community reward. In no instance did the village leaders or stakeholders interviewed feel any resentment to the company but rather were disappointed in their own community’s carelessness or ignorance. When APRIL included a question in the survey around why people still used fire, 17.1% said there was no alternative but 2.1% said because it was good for the soil. In the event that this influential 2.1% saw the trade-off between starving or burning, then perhaps a bigger root cause could be addressed by showing that fire is not needed for soil preparation.
2. Foster greater Entrepreneurship in Villages and “Whole-of-Company” coordinated approach to Agricultural Assistance: Current community development and agricultural assistance seems paternal or over prescriptive in nature, resulting in greater dependency among villagers. APRIL should consider reducing over-assistance of villagers, adding entrepreneurship education and adapting organisations like MPA and the Crew Leader network for entrepreneurship roles. Furthermore it seems that APRIL could review its approach to FFVP Agricultural Assistance as it intersects with its Community Development budget and also some of the community development it is doing with CSR and its Riau Ecosystem Reserve (RER) project. By combining resources and planning a whole of company approach, more efficiency and better outcomes could be achieved for all teams.
3. “Fire Free” Branding and Marketing Support: One concept was to create a brand for product created by FFVP villages which was aligned to ‘Organic’, ‘FairTrade’ and also ‘Fire Free’ so that it could be priced above the commodity prices and receive a “haze prevention premium”. Singapore would be a receptive market for Fire Free Organic goods such as the mangos, kang kong, pineapples and even natural sago. In Singapore, Kale and Shard sells for SGD 10-14 per bunch which is an enormous sum for Indonesian villagers. Indeed villages could also directly sell to SaladStop and other Singapore companies which are focused on supply chain transparency. To explore this, demand for organic or non organic produce would need to be assessed. Currently most vegetables, chicken, and meat are from Bukit Tinggi (West Sumatra) and Medan (North Sumatra) because the supply from Pekanbaru or Kerinci is still insufficient. If this is the case, then a very immediate local opportunity could exist for suppliers in FFVP regions that could be the focus of Agricultural Assistance expanding current purchasing from the Unigraha Hotel and the APRIL canteens and staff purchasing, to Kerinci township, Pekanbaru and the rest of Riau.
4. Building up and leveraging the Crew Leader network: A key starting point could be connecting to the strong network of the crew leaders and potentially recruiting another person or an “Agricultural Assistance Leader” from the village or combining efforts with the APRIL Community Development team which is a separate budget and division.

Project 3: Execution and Impact of Sustainable Agricultural Assistance

KPI	IMPACT	EXECUTION
Short-term contribution to the reduction of burnt areas and positive engagement with the communities.	LOW	With land tenure issues, inappropriate equipment deployment, potentially misaligned expectations, potentially misdirected incentives, over-enthusiastic community development support and high staff turnover, it appears that Agricultural Assistance had low impact in the short term on positive engagement with the communities and reduction in burnt areas.
Long-term community cultural shift, socialization, education and fire free alternative livelihoods.	MEDIUM	Given the fertility of the land, agriculture seems to be the clearest path for revenues. To quote the Village Leader Edi “Only when our bellies are full can we worry about social issues.” To achieve tangible long term outcomes, effective strategy and implementation is needed for Agricultural Assistance and based on current outputs, this requires company review and appropriate staff and strategy.
APRIL’s potential return on Investment.	MEDIUM	IDR 1.553 bill. (USD 129,453) was expended in 2016 which is up 21% from IDR 1,287 bill. (USD 107,241) in 2015. It is not clear if greater returns have been generated by APRIL given the apparent low impact of the Agricultural Assistance program.
OVERALL	LOW SUCCESS BUT HIGH POTENTIAL	

REVIEW OF PROJECT 4 - COMMUNITY AWARENESS

Hypothesis: How effective has community awareness of FFVP been in 2016? Has it contributed short term and long term avoidance of fire? How effective was the new school awareness program? How will community awareness and communications succeed in the future with the diminishing interest by media as the fires of 2015 fade into the past?

Budget: IDR 140 mill (USD 11,667).

Actual: IDR 839.5 mill (USD 69,961) was expended in 2016.

Historic: Up 48.6% from 2015 when IDR 565 mill. (USD 47,083) was spent.

Budget 2016 - \$11,667 USD.

Actual 2016 - \$69,961 USD.

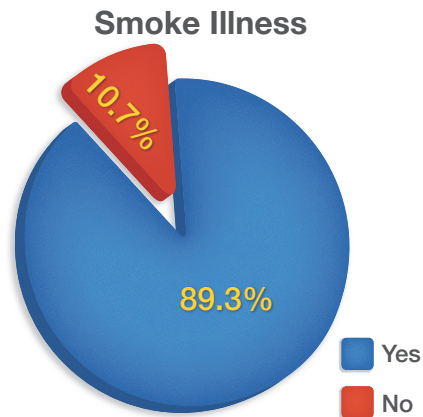
Historic 2015 - \$47,083 USD.

Project Manager: 2016 Sailal Arimi/2015 Djarot Handoko.



Riana Ekawati who led the School Awareness Program with the Alam and Bunga comic she taught from.

Village questionnaire survey feedback: Awareness of the negative impacts of smoke from the haze was almost complete at 99.3%. Furthermore 89.3% were actually aware of cases of illness as a result of the haze in their area. This level of awareness of not only the theoretical dangers of the haze but of anecdotal cases of illness in their village area is a compelling rationale for engagement. Only 22.9% of respondents surveyed had heard about or knew about other fire free programs, so in a way FFVP has occupied a “mental vacuum” to establish itself as a category defining “first mover.”



Awareness of actual cases of smoke related illness in their area was very high at almost 90%.

Results: 2016 saw great press interest in all fire related stories, so the communications campaign and PR results were extensive. Over 100 press articles and online posts were noted. The haze which caused the international community to apply huge pressure on the Indonesian Government and in the future, as the media grow familiar with FFVP and given the rapid news cycle, new programs and initiatives will be required. One such program was the School Awareness Program led by Riana Ekawati which was a powerful new short term initiative to engage rural communities via family units.

In many ways the success of this program was driven by the project lead Riana Ekawati who was exceptional in her coverage of 50 schools and is integral to the new Fire Aware Community (FAC) which extends to villages beyond FFVP. She was assisted by the Corporate Communications team led by Djarot Handoko and Rudi Fajar’s Community Development team.

By connecting with the schools via the principal, APRIL was able to join classes and directly socialize FFVP with the students who in turn took their discussions, related materials and comic books home to discuss with their parents.



FIRE AWARE COMMUNITIES (FAC) GOES TO SCHOOL 2016

NO.	WEEK	SCHOOL	VILLAGE	AREA
1	15 - 20 Aug 2016	SDN 002 KOTA BARU	Kota Baru	Teso
2		SDN 002 PENGHIDUPAN	Penghidupan	Teso
3		SDN 001 GUNUNG SAHILAN	Gunung Sahilan	Teso
4		SD 010 SIABU	Siabu	Teso
5		SDN 002 MUARA LEMBU	Muara Lembu	Logas
6	22 - 27 Aug 2016	SDN 005 KEBUN LADO	Kebun Lado	Logas
7		SDN 003 SUNGAI PAKU	Sel Paku	Logas
8		SDN 003 PULAU PADANG	Pulau Padang	Logas
9		SDN 007 TELUK PAMAN	Teluk Paman	Logas
10		SDN 002 KUNTU	Kuntu	Logas
11		SDN 001 LANGGAM	Kelurahan Langgam	Langgam
12	29 Aug - 3 Sept 2016	SDN 006 PENARIKAN	Penarikan	Langgam
13		SDN 007 PKL.GONDAI	Pangkalan Gondai	Langgam
14		SDN 003 SOTOL	Sotol	Langgam
15		SDN 005 SEGATI	Segati	Langgam
16		SDN 002 PASAR BENAI	Kelurahan Benai	Cerenti
17		SDN 010 TALONTAM	Talontam	Cerenti
18		SDN 006 BANJAR BENAI	Banjar Benai	Cerenti
19		SDN 024 MUNSALO	Munsalo	Cerenti
20		SDN 017 JAYA KOPAH	Jaya Kopah	Cerenti
21		SDN 016 KOPAH	Kopah	Cerenti
22		SDN 005 SIKAKAK	Sikakak	Cerenti
23	SDN 003 PULAU JAMBU	Pulau Jambu	Cerenti	
24	5 - 10 Sept 2016	SDN 001 TELUK BERINGIN	Teluk Beringin	Cerenti
25		SDN 011 PULAU MUNGKUR	Pulau Mungkur	Cerenti
26		SDN 005 GUNUNG MELINTANG	Gunung Melintang	Baserah
27		SDN 003 LUBUK KEBUN	Lubuk Kebun	Baserah
28		SDN 016 SITUGAL	Situgal	Baserah
29		SDN 016 AIR HITAM	Air Hitam	Ukui
30		SDN 001 DAYUN	Dayun	Pelalawan
31	SDN 014 PANGKALAN DELIK	Delik DS III PKL Delik	Pelalawan	
32	19 - 24 Sept 2016	SDN 002 LUBUK JERING	Lubuk Jering	Mandau
33		SDN 009 MUARA KELANTAN	Muara Kelantan	Mandau
34		SDN 010 TUMANG	Tumang	Mandau
35		SDN 004 OLAK	Olak	Mandau
36	19 - 24 Sept 2016	SDN 004 BUATAN II	Buatan II	Mandau
37		SDN 013 BUATAN I	Buatan I	Mandau
38		SDN 018 TANJUNG PAL	Penyengat	Futong&Buatan
39	19 - 24 Sept 2016	SDN 007 LUBUK DALAM	Rawang Kao	Futong&Buatan
40		SDN 006 SENG KEMANG	Seng Kemang	Futong&Buatan
41		22 - 27 Aug 2016	SDN 001 SIMALINYANG	Simalinyang
42	SDN 005 KOALA TOLAM		Kuala Tolam	Meranti
43	SDN 003 SUNGAI ARA		Sungai Ara	Meranti
44	SDN 002 PETODAN		Petodaan	Pelalawan
45	SDN 005 KUALA PANDUK		Kuala Panduk	Pelalawan
46	SDN 001 PANGKALAN TERAP		Pangakalan Terap	Meranti
47	29 Aug - 3 Sept 2016	SDN 010 TELUK BINJAI	Teluk Binjai	Meranti
48		SDN 003 TELUK MERANTI	Teluk Meranti	Meranti
49		SDN 001 PELALAWAN	Kelurahan Pelalawan	Pelalawan
50		SDN 003 LUBUK KEMBANG BUNGA	Lubuk Kembang Bunga	Ukui

This was the list of the 50 schools Riana Ekawati presented the School Awareness Program to over the course of 2016.

The support for the program by schools and the Riau Education Department and administrators was crucial to its success. When requested, all parties immediately agreed to include this program into their curriculum and helped facilitate the connection to schools to schedule appropriate times to present. Riana Ekawati visited with local NGO Blue-Green these 50 villages in just 2 months and she talked to 5th and 6th grade (9-12 years old) in a 1 hour class.

DURATION	ACTIVITY	PIC	INFORMATION
I. Preliminary Activity			
5 Minutes	Greeting from Teacher/Headmaster	Teacher/Headmaster	
5 Minutes	Introduction of FAC Team	FAC Team	
II. Core Activity			
30 Minutes	Delivery of content	FAC Team	Video viewing session and souvenir distribution
III. Closing Activity			
15 Minutes	In the end of the session, all students were asked to give their best ideas to prevent forest and land fire, write it on a leaf, and paste it on a tree	FAC Team	
5 Minutes	Closing by Teacher/Headmaster	Teacher/Headmaster	



Schedule of the School Awareness Program over an hour in class with the students.

The comic characters Bunga (Flower girl) and Alam (Nature boy) were important tools to explain how children were stuck at home, unable to go to school, were bored and got sick and that the best option was to stop fires and have no smoke in the first place. Designed in October/November 2015, drafts were developed in Feb 2016 and the syllabus was proposed to the Ministry of Education where it received Riau Provincial endorsement. The timing was key because syllabus changes were approved when officials learnt that it was haze oriented and participation was almost immediate. Garnering government support at this speed is nearly unheard of, the comic was then developed by Blue Green with an independent cartoonist and completed for launch in June 2016.

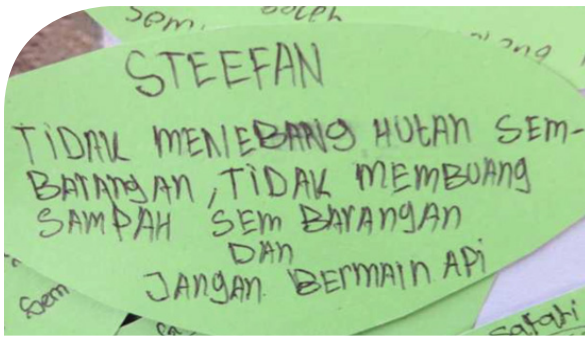


The classes featured “Smoke Free is Cool” stickers and badges in English because English is highly regarded by the students and also involves students reflecting, coloring and writing down their commitments on green leaves.

The lessons in schools include a presentation where Riana explains the animals in the forest: photosynthesis and oxygen from trees; how one tree is needed for air for two children; how floods, erosion, and landslides can be caused by deforestation; what happens to animals if forests burn; how harmful poor air is; the dangers when fire spreads; and what must be done to save the forests.



Then pasting onto the bare tree poster to make the tree green with leaves of reflection and commitment by the school children creating the “Pohon Aksi” or tree of action.



This leaf says “dont burn forest, do not waste the garbage and do not play with fire.”

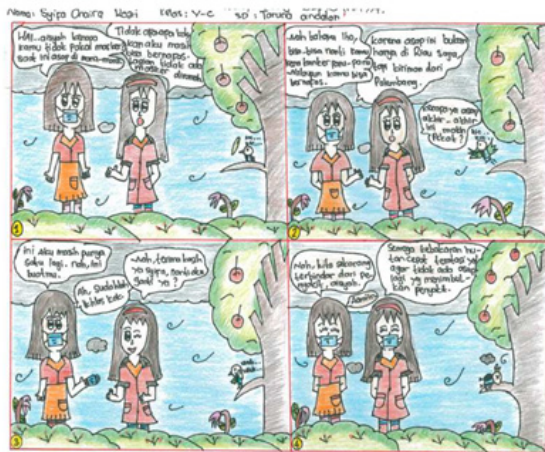


They then compiled the best of these comics, digitalized them into an ebook which is now available online.



Taken on 15 August 2016 after class. The presentations were scheduled during the fire season to optimize impact.

Of the 50 villages Riana Ekawati visited, 18 were also in the FFVP and others were in the Fire Awareness component.



Project 4: Community Fire Awareness.

Recommendations:

1. Expand reach of the school awareness program: The support by the Riau Government was a great precedent for Provincial Education Departments. This case study should be expanded across Riau next year and also expanded across all provinces possible. The cost is small for a highly effective program to be rolled out.

2. Expand funding channels for the school awareness program: Using this pilot as a case study and illustrating the high return on investment and high impact in these 50 schools, funding should be procured from Charitable Foundations, Government sources, International donors and corporate CSR programs. The donors or sponsors could fund a number of schools in a package where the cost per school is very low.

3. Expand education programs to adult village level: It is recommended that community awareness programs in 2017 consider advising and educating the villages of key factors that increase risk of fires, similar to this school awareness platform. Low rainfall and simple signs showing fire risk, advisories on the responsible disposal of cigarettes and identification of the areas of low water levels, dryness or prior damage creating “forest cemeteries” should all be noted.

4. Continuing communication & awareness and responding to reduced public interest to build concern for the next haze: One of the greatest challenges is the rapidly diminishing memory of the 2015 El Nino fires and the reduced public interest. There needs to be a campaign to raise the awareness of the potential for the return of the fires; otherwise the momentum and public interest could fall significantly in coming fire seasons.

From our review, Community Awareness was a successfully implemented FFVP project in 2016 with strong socialization in schools and on the ground in villages via students as well as strong communication outcomes leveraging the media's continued interest in stories and the anniversary of the terrible 2015 fires. Furthermore, with the success of the comic book, some of the more experimental communication strategies by NGOs such as Blue Green initiated in 2015, seem to have paid off when implemented in concert with the Community Development and Corporate Communications teams. The indomitable spirit of Riana, an outstanding teacher, was at the heart of the excellent execution of this program.

The relevance and strength of the School Awareness Program was further verified by the sheer number of quotes by interviewees who understood that the impact of the haze was greatest on children.



"Forest Cemeteries" with the dead trees providing high risk areas in the future.

Yening (seller) from Sering (33 years):

"I have asthma from my family (like genetic disease) and it is getting worse since smoke and haze in 2015. If the forest is burnt, then maybe our next generation will never know what the forest is supposed to look like."

Dodi (employee) from Kuala Panduk, (36 years old):

"The forest and land fires had the biggest impact for children health in my village, because physically they are not strong enough and very fragile."

Iswan (Unemployed) from Dayun, (39 years old):

"The forest and land fires also impacted the education, especially for my child, because when the smoke season came the schools must be closed for a long time then when they had to go to the school again, they had test. It made my child get bad marks."

Even Riana Ekawati reported that the Riau Province Educational and Cultural Department Head, Dr H. Kamsol had said at that time that in 2015 there was decreased academic performance and school children were quoted saying:

"My mother wouldn't let me go outside because my friend got sick from the Haze, so I was really bored. My mother was afraid I would get infected also."

Project 4: Execution and Impact of Community Fire Awareness

KPI	IMPACT	EXECUTION
Short-term contribution to the reduction in burnt areas and positive engagement with the communities.	HIGH	Publicity and communications through social media and press were highly successful in generating significant hits and coverage. Direct communications in villagers including flyers, shirts and banners distributed together with the Crew Leader and Village Leader contributed significantly to reducing burnt areas. The School Awareness Program was very successful in the short term.
Long-term community cultural shift, socialization, education and fire free alternative livelihoods.	HIGH	The schools program was the starting point of what looks to be an outstanding long term strategy and should be pursued across all schools approved by Riau Provincial Government. However, long term prospects for alternative economic livelihoods for the local communities are still evolving and currently appear to require closer connection to the Agricultural Assistance project.
APRIL's potential return on Investment.	HIGH	<p>IDR 839.5 mill (USD 69,961) was expended in 2016 which is low considering the high impact. Spending on Community Awareness was up 48.6% from 2015 when IDR 565 mill. (USD 47,083) was spent of which in 2015 USD 9,517 was spent on program shirts, hats, booklets, flyers and banners for local socialization. The Blue Green spend of USD 19,034 produced a highly effective comic book although we are yet to see any output of the promised documentary or TV coverage.</p> <p>ROI was also high because FFVP provided strong stories and successful case studies for pitching and distribution by Corporate Communications and External Affairs Teams in Kerinci, Jakarta and Singapore.</p>
OVERALL	HIGH	

REVIEW OF PROJECT 5 - AIR QUALITY MONITORING

Hypothesis: How important is Air Quality Monitoring to FFVP? What is the responsibility of FFVP to provide Air Quality Monitoring to participating villages? How does spreading the World Health Organisation's recommendations on healthy, unhealthy and dangerous levels of air pollution in Indonesia help short term and long term fire prevention? Should FFVP also start providing public information and develop a reporting platform with appropriate air quality health messages? Do aerial surveys assist with the monitoring and correlate to the Air Quality Monitor readings?

Budget: IDR 1.22 bill. (USD 101,850).

Actual: IDR 628.2 mill. (USD 52,350) was expended in 2016.

Historic: Down 17.5% from IDR 833mill. (USD 63,438).

Budget 2016 - \$101,850 USD.

Actual 2016 - \$52,350 USD.

Historic 2015 - \$63,438 USD.

Project Manager: 2016 Sailal Arimi/2015 Craig Tribolet.



Aerial surveys to cover the big fire scar areas in Pulau Muda.

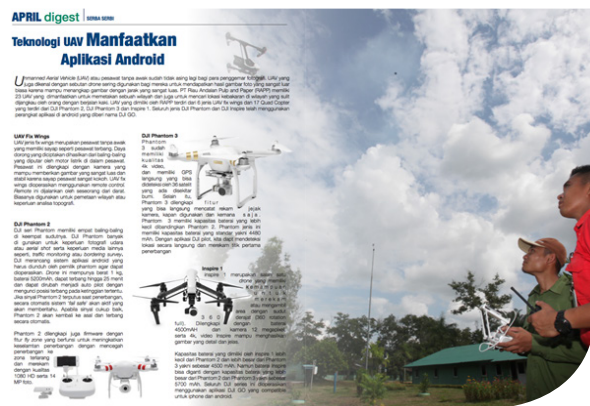


Zooming in showed no signs of replanting indicating a potential accidental burning.



Dust Sentry module.

Results: In 2016 Air Quality Monitoring was not as critical a function for the ongoing FFVP. The far lower levels of fire and haze meant air quality was simply not as large a concern to stakeholders. However aerial surveys using helicopters and the increased use of drones to monitor smoke, hotspots and fires on the estates and surrounding land provided a strong demonstration of the rule of technology in monitoring and suppression as well as awareness and prevention.



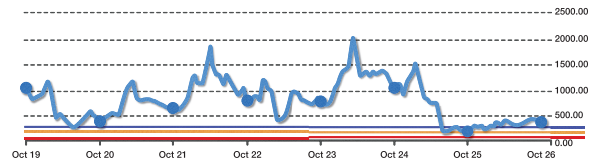
APRIL Digest Volume 4, March 2016.

In August 2015, Aeroqual Dust Sentry Air Quality Monitors were installed across three APRIL facilities: The Meranti Estate Office, Teso Estate Office and Kerinci Fiber Office. Budget was then allocated for more monitoring equipment and information sharing platforms and four new monitors were purchased in 2016, but for deployment only in 2017. This was partly because of delays as the manufacturer was undertaking a significant software update. However It was also a lower priority for management and there was internal discussion on whether it was APRIL's responsibility to share air quality information with surrounding villages. The concern remains that there could be adverse responses by communities if unhealthy levels of air pollution are detected but nothing can be done to address the haze problem from large fires in South Sumatra and Jambi.

In addressing these issues, it becomes clear that Air Quality Monitoring and disclosure of the levels of danger to health created by fires will be hugely important to the long term awareness and cultural shift towards embracing FFVP. Whilst FFVP has no obligation to provide Air Quality Monitoring results or real time updates to participating villages, disseminating the information and showing the relationship to the World Health Organisation's (WHO) recommendations on dangerous levels of air pollution would foster trust and APRIL would be seen as going above and beyond its obligations to address a threat common to all stakeholders. Ultimately this information on air pollution levels would underscore the need for short and long term fire prevention.

Recommendations:

1. Share monitoring results with the villages, Crew Leaders and Village Heads: Starting with the catastrophic statistics from 2015, FFVP should provide a simplified summary of what happened, how it related to WHO standards, and how damaging it was to community health; translated citations and summaries of Harvard and Newcastle University reports on the health impacts of the haze could also be circulated. It is critical that key village leaders understand the gravity of these statistics: WHO air quality measurements are typically reported in terms of daily or annual mean concentrations of Particulate Matter (PM) 10 levels or PM10 particles per cubic meter of air volume (m3) and the acceptable WHO range is 20 µg/m3 annual mean to 50 µg/m3 24-hour mean. Therefore it is almost incomprehensible that for the 2015 fire season, Kerinci's recorded PM 10 levels over 24 hours were more than 1,800 µg/m3 (Teso, 21 Oct) and 1,400 µg/m3 (Meranti, 5 Sept). This is up to 36 times the acceptable healthy WHO level. Villagers therefore must understand that the cost to health and loss of life is not worth the burning. As seen in the graph on the right, PM10 Haze Monitoring in Kerinci at the peak of Haze season did not see a single day drop down to the acceptable WHO levels. While this is alarming it does also create a galvanizing educational and awareness tool if properly utilized now. The message that this must never happen again is one that should be heard nationally.



Graph: From 19 – 26 October, PM 10 readings at APRIL facilities were far above dangerous levels of pollution according to WHO (red), US EPA (yellow) and Indonesian (blue) recommended levels.

2. Open reporting systems to the public: In 2015, an automated reporting system linked to specific health warnings was developed but put on hold by management during the peak of the haze crisis. Moving forward, however, knowledge of this devastating event including anecdotal stories of death and injury caused by the haze should be used to stimulate a cultural shift and encourage long term FFVP adoption. It was originally planned that the automated reporting system be available online from February 2016 but this did not happen. It is recommended that it now be launched for 2017 to provide clarity, education and transparency with respect to the causal link between fires and harmful pollution.

Project 5: Execution and Impact of Air Quality Monitoring

KPI	IMPACT	EXECUTION
Short-term contribution to the reduction in burnt areas and positive engagement with the communities.	MEDIUM	Air quality monitoring devices, drones and measuring devices for data collection and tracking were activated but these have made a low contribution to reducing burnt areas.
Long-term community cultural shift, socialization, education and fire free alternative livelihoods.	LOW	<p>An awareness campaign with connection to academic studies, anecdotal studies and PM 10 data that would link detrimental health effects to burning land and lead to long-term community cultural shift, socialization, education and fire free alternative livelihoods.</p> <p>The campaign has yet to be launched so no data has been released; therefore no progress has been made towards long term cultural shift and socialization has commenced with the community.</p>
APRIL's potential return on Investment.	LOW	As the budget was USD 101,850 but only USD 52,350 or barely 50% was expended in 2016 it is apparent that budgeted plans were not implemented and strategic direction has changed. Furthermore, given that spending on Monitoring is down 17.5% from USD 63,438 in 2015, we recommend revisiting for 2017.
OVERALL	LOW	

CLOSING REMARKS BY THE AUTHOR

The fires of 2015 acted as a galvanizing call to action. The immense international and national pressure, media coverage and alarming academic reports by Harvard reporting 100,000 premature deaths and the University of Newcastle calculating 69 million people exposed to the “killer haze”, all served to heighten the critical importance of FFVP.

The long-standing tradition of fire as a land management tool in rural areas and the historical trans-migration and resulting demographic pressure on landscape that also saw fire used to clear forest and as an agricultural tool, led to the first fire crisis in 1997. With the growth of the private sector in Riau, the need evolved for APRIL to take the lead and become more proactive in fire prevention. Indeed with FFVP, the company definitely goes over and above normal CSR standards of care and well beyond current legal baselines.

Given the higher return on investment of fire prevention compared with suppression of fire once it has occurred, 2015 was a turning point in the evolution of FFVP. FFVP 2016 has continued to build on the momentum of the strong public, media and government demand that we never again experience fires like those of 2015.

2016 was a far more manageable fire season compared to the disastrous prior season. The Presidential push and the national media momentum gave FFVP the opportunity to ride the wave of awareness and exert pressure to shift rural practices and make all communities within FFVP realize that fires are a threat to health and prosperity, and must be stopped.

Unfortunately, however, a single fire in a single community grew to such a significant size that it distorted an otherwise very successful FFVP year and reversed what would otherwise have been a reduction in burnt area compared to 2015.

This year, FFVP has continued to grow and evolve as the most comprehensive and coordinated solution, with some of the notable learnings including:

1. The School Program, which was conducted in 50 villages in 2016, was an effective good long term education tool that resonated with kids and in the short-term created conversation starters at home among families and for broader socialization.
2. Community momentum in the combined region seems to reach an “awareness tipping point” once an area is totally socialized. This could provide an ongoing socialization dividend so less funding is required after the initial “surge” and push. Indeed if there is greater shared information among communities then this can leverage the existing understanding of both interlinked risk and shared future prosperity as evidenced in the following quotes:

Nani (Housewife) from Penarikan, 60 years old:

“My fields caught on fire because another land was already on fire. It crept across to my land and I lost so much because of it.”

Tengku Said Tomy (teacher) from Petodaan, 30 years old:

“When the smoke season came in 2015, in my village there was not so many haze. But because another community might not be aware of the fire and the impact of the haze, because they burn, then the haze flows into other villages.”

Zulfan (farmer) from Pelalawan, 53 years old:

“The forest and land fire are danger because they can produce smoke and haze, and also if the fire get bigger it will be spread to other land.”

3. Expansion of FFA could continue with the momentum created by the 2015 haze although we need to stay active and engaged as the perception that the El Niño threat is reduced could lead to less concern and engagement.
4. Joint Patrols were powerful “stick” deterrents, virally discussed in villages and, when considered together with news of measures by President Jokowi, provided a strong reinforcement of the repercussions of burning.
5. Rewards could be calibrated in recognition of the facts that village sizes differ and therefore so does fire risk and the ease or difficulty of defending from fire. e.g. Should there be 2 crew leaders for MOU areas that are 100K+ hectares?
6. Agricultural assistance needs to be reviewed as there are multiple budgets that potentially support the concept of “giving a man a fish to feed him for a day rather than teaching him to fish for a lifetime.” In many cases it seems that there is too much guidance and support being provided, which is reducing entrepreneurship. Villages that graduate as fire resilient communities will have more freedom in their decisions making, but will need stronger agricultural assistance.
7. Very local causes exist for fires from accidents to villages which insist that burning is the only viable way to maintain a traditional way of growing corn.

- Crew leaders sharing of photos daily via WhatsApp is a great way to keep them engaged even if not paid and a bigger village Fire Free Alliance chat network could create an important online community. The FFA also shows how the innovative open sourcing of solutions to common threats and transparent sharing of information can work well.

FFVP has expanded vertically and horizontally. Vertically FFVP now includes a precursor program called the “Fire Aware Community” program to prepare villages for FFVP and subsequently a “Fire Resilient Community” program to help graduating FFVP villages continue the momentum and remain fire free long term. This is truly a comprehensive journey to help grow village capability for fire free futures.

Horizontally, FFVP has expanded geographically from nine villages and approximately 400,000ha in 2015 to 18 villages and nearly 600,000ha in 2016. FFVP was then further boosted by the launch of the Fire Free Alliance (FFA) which had APRIL open source and share the FFVP program with three other multinational agricultural companies to further expand FFVPs reach. FFA has definitely helped drive a more collaborative culture to openly share best practice for fire prevention and FFVP within the industry and also across Indonesia.

Collectively when the efforts of all FFA members are included, FFA will now touch hundreds of villages and a millions of hectares with elements of the FFVP. Over the coming years, by sharing the learnings of companies which are all positively and proactively responding to the common threat of fires, FFVP has now effectively established the scale, tactics and strategies for a fire free future.

Fire prevention in non El Nino years might be considered as a lower priority so APRIL’s continued financial support and expansion of funding for Awareness, Resilience and FFA programs is a credit to the long term sincerity and commitment to creating a lasting fire free future. However, in the same vein as the concern that FFVP could become too paternalistic, CC recommends that the entire program start looking aggressively to bring in external investors who can help spread the mantra of ownership, leadership and responsibility.

Few conservation programs have had the success rate that FFVP has had with such compelling rates of local community buy in. AUSAID, USAID, NORAD, IDH, WorldBank, GTZ, ADB and other international funding sources should be approached as international finance could and indeed should build on the achievement of APRIL and the FFA partners. Perhaps even a FFVP led Fire Free Fund could be established to scale these efforts and avert another regional transboundary haze incident and further catastrophic fire related climate change events.

The progress of FFVP has continued to be impressive and has, in many respects, exceeded the expectations of this review. Given the challenges on the ground

of land conflicts and ownership uncertainty, poverty and corruption, it was originally feared that only with the assurance of sufficient alternative livelihoods could FFVP be successful. However, it seems that socialization, awareness and doing the right thing have been effective in keeping communities fire free. It is truly impressive to see how FFVP and its related programs have continued to gain awareness and earn mindshare within local communities and have effectively tapped the 2015 momentum provided by Government, police and media; this even in spite of challenges to progress with Agricultural Assistance FFVP initiatives.

Longer term, the challenge for APRIL will be ramping up “no burn but earn” livelihoods as well as to continue allocating required budgets as the threat of 2015 level fires diminishes. Furthermore, the challenge for FFVP will be keeping the pressure up on the enforcement of fire crimes as police, government resolve and community memories of the 2015 fires fade. It is for this reason that 2017 is of critical importance, to keep the momentum from Post-2015’s “Haze 9-11” or “Eco-pocalypse” to quote the Guardian newspaper and avoid the classic short term media cycle in which resolve potentially weakens as memories fade.

The need for APRIL to share FFVP responsibility and scale beyond just a single company’s balance sheet is immediate and obvious, which is why the FFA was a tremendous development. By transparently communicating, reviewing and collaborating with other agricultural companies while also standing shoulder-to-shoulder with villages during fire seasons, we believe APRIL has gone beyond the normal call of duty of a responsible corporation. The challenge for 2017 will be in scaling APRIL’s team operating FFVP, continuing the momentum as fire memories fade and broadening the funding sources to create a long term multilateral platform to ensure the FFVP has a clear path towards reaching that vital socialization and awareness tipping point in Riau, Sumatra and all of Indonesia and creating a fire free future.

APPENDIX 1: Village Leaders & Crew Leaders

NO	VILLAGE NAME	KABUPATEN/ REGENCY	KECAMATAN/ SUBDISTRICT	VILLAGE HEAD	CREW LEADER
1	Kelurahan Pelalawan	Pelalawan	Pelalawan	Edi Arifin	Rizal
2	Desa Sering	Pelalawan	Pelalawan	HM Yunus	Bairo
3	Desa Kuala Tolam	Pelalawan	Pelalawan	Edi Jasman	Helmi
4	Desa Kuala Panduk	Pelalawan	Teluk Meranti	Tom Jon	Rijal
5	Desa Petodaan	Pelalawan	Teluk Meranti	Azwir	Raves
6	Desa Teluk Binjai	Pelalawan	Teluk Meranti	Musri Effendi	Zuriadi
7	Kelurahan Teluk Meranti	Pelalawan	Teluk Meranti	Rustam	Aspa Roni
8	Desa Pulau Muda	Pelalawan	Teluk Meranti	Rustam	Marzuki
9	Desa Segamai	Pelalawan	Teluk Meranti	Rizaldi	Isundri
10	Kelurahan Langgam	Pelalawan	Langgam	Jon Havazar	Ihsan
11	Desa Penarikan	Pelalawan	Langgam	Imran Saherman	Mukhlis
12	Desa Pangkalan Gondai	Pelalawan	Langgam	Zulfahmi	Aprir Rahmadianto
13	Kampung Dayun	Siak	Dayun	Nasya Nugrik	Robianto
14	Kampung Olak	Siak	Sungai Mandau	Amrin	Akmaludin
15	Kampung Lubuk Jering	Siak	Sungai Mandau	Asril Z	Hidayat
16	Desa Tanjung Padang	Kepulauan Meranti	Tasik Putri Puyu	Abu Sofian	Rizal
17	Desa Tasik Putri Puyu	Kepulauan Meranti	Tasik Putri Puyu	Syahrul	Abd Kadir
18	Desa Lukit	Kepulauan Meranti	Merbau	Edi Gunawan	Supratman

APPENDIX 2: Questionnaire Survey

Village Name: _____

Age Group: i. <18 yrs
 ii. 18 – 27 yrs
 iii. 28 – 37 yrs
 iv. 38 – 47 yrs
 v. 48 – 57 yrs
 vi. > 57 yrs

Gender: Male / Female

Occupation: _____ / parent / unemployed

Name (optional): _____

Contact HP: _____

1. Pengaruh asap sangat besar terhadap masalah kesehatan, menurut Anda mengapa masyarakat tetap menggunakan api sebagai alat untuk membuka hutan dan lahan?
Given that smoke haze causes such huge health problems why do you think people still use fire?

No alternative	Don't understand consequences	Don't care about health issues	Better for soil
----------------	-------------------------------	--------------------------------	-----------------

Comment / Other / Don't know:

2. Apakah Anda tahu akan bahaya kebakaran hutan dan lahan serta asap yang dihasilkannya?
Are you personally concerned about forest and land fires and the impact of smoke-haze?

YES	NO
-----	----

Comment:

3. Apakah Anda tahu ada Asap yang menyebabkan penyakit/kematian di desa ini?
Do you know of any smoke-haze related illness in this area?

YES	NO
-----	----

Comment:

4. Apakah Anda pernah mendengar tentang Program Fire Free Village Program / Program Desa Bebas Asap?
Have you heard about the Fire Free Village Program?

YES	NO
-----	----

Comment:

5. Apakah Program ini membawa perubahan pada masyarakat dalam menggunakan api sebagai alat membuka lahan ? Apakah desa pernah menerima reward karena tidak membakar dari FFVP ? Jika pernah untuk apa uang reward tersebut dipergunakan? Apakah Anda setuju?
Has this village received a reward for not burning? If yes, what was the reward money spent on and did you agree with this? If no, why no reward yet?

YES	NO
-----	----

Comment (please include comment especially about reward):

6. Apakah Anda tahu siapa Crew Leader? Jika iya, apa pekerjaan mereka?
Do you know who the village crew leader is? If yes, what is their job?

YES	NO
-----	----

Comment:

7. Apa yang terjadi jika ada api terdeteksi di desa?
What happens if a fire is detected in the village area?

Nothing	MPA suppress	Community suppress	Government fire teams suppress	Company fire teams suppress
---------	--------------	--------------------	--------------------------------	-----------------------------

Comment:

8. Apakah ada tim Fire di desa ini yang mampu melakukan pemadaman yang sudah pernah ditraining dan tersedianya peralatan yang memadai?
Do you have a local fire team capable of putting out fires with the right training and equipment?

YES	NO
-----	----

Comment:

9. Apakah masyarakat memiliki akses pada peralatan yang tepat untuk mempersiapkan lahan tanpa bakar?
Does the community have access to appropriate tools and equipment to prepare the land without fire?

YES	NO
-----	----

Comment:

10. Apa alternatif yang ada untuk menyiapkan lahan tanpa bakar? Apakah ada program pemerintah untuk mencegah kebakaran hutan dan lahan?

What alternatives are available to preparing land without fire?

None – only fire	Small hand tools	Heavy Equipment	Government Responsibility
------------------	------------------	-----------------	---------------------------

Comment:

11. Apakah Anda mengetahui program FFVP yang lain saat ini ?

Are you aware of any other Fire Prevention programs currently?

YES	NO
-----	----

Comment:

12. Menurut Anda apakah elemen yang paling penting dari Program FFVP? Jika Anda bisa mengubah satu hal di desa, atau dengan program FFV, apakah itu? *If you could change one thing in the village or FFVP what would it be?*

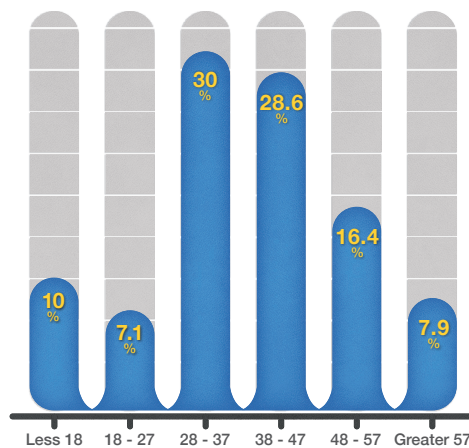
Comment:

Thank you for your time – your opinion is very important in making the FFVP better!

Village		Surveys Completed	FFV Year
1	Dayun	8	1
2	K. Panduk	9	2
3	K. Tolam	10	2
4	Langgam	10	1
5	Lubuk Jering	6	1
6	Lukit	6	1
7	Olak	8	1
8	Pelalawan	6	2
9	Penarikan	10	1
10	Petodaan	8	2
11	Gondai	8	1
12	Pulau Muda	7	1
13	Putri Puyu	7	1
14	Segamai	5	2
15	Sering	9	2
16	Teluk Binjai	7	2
17	Teluk Meranti	10	2
18	Tanjung. Padang	6	2
Total		140	

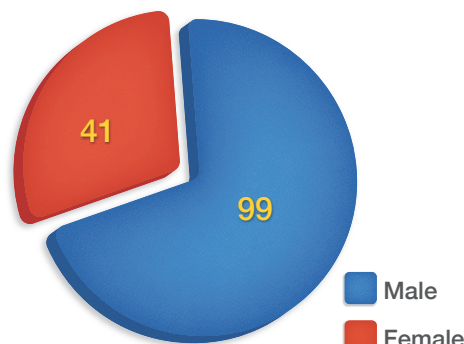
The total 140 respondents were distributed across all 18 villages providing a geographical spread of data points.

Age Groups



Respondents were surveyed in all age groups with a particular focus on the accessible.

Gender



Gender distribution of respondents was 70.7% male and 29.3% female.

Category		Count	Percent
Age Groups	Less 18	14	10,0%
	18 - 27	10	7,1%
	28 - 37	42	30,0%
	38 - 47	40	28,6%
	48 - 57	23	16,4%
	Greater 57	11	7,9%
Gender	Male	99	70,7%
	Female	41	29,3%
Fire Use	No Alternative	24	17,1%
	Don't Understand	2	1,4%
	Don't Care	1	0,7%
	Good for Soil	3	2,1%
	Not Used	110	78,6%
	Other	0	0,0%
Concerned	Yes	139	99,3%
	No	1	0,7%
Smoke Illness	Yes	125	89,3%
	No	15	10,7%
FFVP Awareness	Yes	108	77,1%
	No	32	22,9%
No Burn Reward	Yes	106	75,7%
	No	34	24,3%
Crew Leader	Yes	99	70,7%
	No	41	29,3%
Suppression	Nothing	4	2,4%
	MPA	43	25,9%
	Community	105	63,3%
	Government	6	3,6%
	Company	8	4,8%
Local Suppression	Yes	95	67,9%
	No	45	32,1%
Approp. Ag. Tools	Yes	28	20,0%
	No	112	80,0%
Ag. Alternatives	None	4	2,6%
	Hand Tools	127	82,5%
	Heavy Equipment	23	14,9%
	Government	0	0,0%
Other Programs	Yes	32	22,9%
	No	108	77,1%
Total Responses:	140		

Survey results for questions above.

