



# FIRE-FREE VILLAGE

PROGRAM

---

**REVIEW 2015**

# CONTENTS

- Fire-Free Village Program Summary.....3
- Introduction .....4
- Methodology.....4
- About Carbon Conservation.....4
  - Reviewer 1: Mr Dorjee Sun.....5
  - Reviewer 2: Ms Aurélie Charneau.....5
- History of the FFVP, learning from past experiences.....6
  - APRIL's motivations.....6
  - The Kampar peninsula.....6
- Previous projects in the area and learning experiences.....7
  - 2013 - Fire Alert Communities (Masyarakat Peduli Api) program.....7
  - 2014 - The Village Incentive Program.....7
- The Fire Free Village Program.....8
  - Brief description.....8
  - October 2014 – Proposal for Fire Free Village Program.....9
  - December 2014 – Program Charter.....9
  - January 2015 – Project manual.....9
  - Feb 2015 – Villageselection.....9
  - July 2015 – Official launch of the program.....10
- Review of 2015 results.....11
  - KPI 1: Contribution to the reduction in burnt areas.....11
  - KPI 2: Contribution to short term positive engagement with local communities.....12
  - KPI 3: Contribution to long term community cultural shift, education & mindset change .....12
  - KPI 4: Contribution to long term economic sustainability of local communities to earn not burn...12
  - KPI 5: Contribution to APRIL return on Investment.....12
- Review of Project 1 - No Burn Village Rewards .....13
- Review of Project 2 - Village Crew Leader.....18
- Review of Project 3 - Sustainable Agricultural Assistance.....21
- Review of Project 4 - Community Fire Awareness.....24
- Review of Project 5 - Air Quality Monitoring.....27
- Closing Remarks by the Author.....29



## The Fire Free Village Program

The Fire Free Village Program is a fire management program that seeks to prevent the fire rather than fighting them by focusing on engagement with the community. Initiated and led by APRIL, the program operates in collaboration with nine villages and two local NGOs, and is supported by the local government, police, military and Riau's Disaster Mitigation Agency.

Officially launched in July 2015, the program consists in five projects:



**No Burn Village Rewards**  
Incentivizing villages not burn.



**Village Crew Leader**  
A program to recruit individuals from local communities as fire prevention advocates and fire suppression specialists at the village level.



**Agricultural Assistance**  
Provision of a range of sustainable agricultural alternatives and mechanical land clearing tools for land management activities.



**Community Fire Awareness**  
A range of community tools to raise awareness of the danger of land clearing by fire and the impacts of burning to health.



**Air Quality Monitoring**  
Installation of three <PM10 detectors and health information.

## INTRODUCTION

Carbon Conservation was commissioned by APRIL to undertake an independent review of its Fire Free Village Program (FFVP) in Riau, Indonesia.

The FFVP is a fire prevention plan that seeks to prevent the fires rather than fighting or suppressing them after they have already started. By engaging its 9 pilot villages and focusing on close collaboration with these communities as well as more widely communicating and transparently sharing its results, APRIL has implemented 5 key projects: No Burn Village Rewards, Village Crew Leader, Sustainable Agricultural Assistance, Community Fire Awareness, and Air Quality Monitoring.

Conceived, initiated, coordinated and driven by APRIL, the program has been executed in partnership with 9 villages and 2 local NGOs, and supported by the local government, police, military and Riau's Disaster Mitigation Agency.

The purpose of this review is to provide an independent evaluation of the Fire Free Village Program as APRIL believes it could be an efficient solution to prevent fires and deforestation in Indonesia. This review covers the 5 projects of the program, the means and resources invested, and their results. It highlights the strengths of the program as well as the shortcomings and challenges. A second part of this review will be offering suggestions for improvement of the FFVP.

## METHODOLOGY

Carbon Conservation's independent review has been based on interviews with the executing team, senior management, financial review of 2015 project budgets, a documentation review and ground-truthing visit to the ground. The two-day field trip organized by APRIL, included a helicopter tour, visits to 3 villages with 1 extended stay and market visit and interviews with NGO Rumah Pohon and other stakeholders such as Crew Leaders, MPA and communications agency Blue Green. We met three village heads spanning the spectrum of a village that received 0% reward, a village that received 50% reward, and a village that achieved no burning and so received 100% reward. In interviewing project managers from the FFVP and members of the APRIL firefighting team we had the opportunity to visit the offices, see the warehouses

for firefighting equipment and sight the monitoring equipment.

To review the program, Carbon Conservation developed 5 key performance indicators (KPIs): Contribution to the reduction in burnt areas, Short-term positive engagement with local communities, Long-term community cultural shift, education & mindset change, contribution to the Long-term economic sustainability of local communities to earn not burn, and finally APRIL's estimated return on investment. Each of the 5 projects were then evaluated against each of those 5 KPIs as well as the general success of each project's execution.

## ABOUT CARBON CONSERVATION

Carbon Conservation is a privately held company established in 2007 in Australia, and is 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 orang-utan conservation and avoided deforestation could be tied in to generate alternative monetary incentives.

## Reviewer 1: Mr Dorjee Sun

Dorjee is a serial social entrepreneur who has founded 15 companies with 2 acquisitions and 3 exits and assets sales in the areas of conservation, agriculture, philanthropy, technology and financial innovation. He is also the founder and director of Carbon Conservation which owns equity in large scale sustainability and carbon conservation projects globally with project partners and clients such as Rio Tinto, Bank of America Merrill Lynch, Olam and Twitter.

The African Rainforest Conservancy honored Dorjee with an Earth Day Award and by naming a newly discovered blue spotted species of chameleon from the Tanzania rainforest – the "Kinyongia dorjeesuni". Dorjee has also been named one of TIME Magazine's Heroes of the Environment, a World Economic Forum Global Leaders of Tomorrow, CPA Top 20 Business Leaders, one of Esquire Magazine's 5 Gentlemen of Philanthropy, one of the Young Leaders by The Australian newspaper.

Dorjee has a law degree, commerce degree and diploma of Asian Studies (Mandarin) from the University of New South Wales and studied at North Sydney Boys High. Growing up in Sydney he now shares his time between Singapore, San Francisco, Sydney and other project locations.

## Reviewer 2: Ms Aurélie Charmeau

Aurélie is a French Environmental Engineer.

She has been working as a field engineer with CH2MHill France on soil and groundwater remediation projects. Coordinating and conducting field events, she received a safety award for successful completion of a complex real-time investigation.

She also was involved in the implementation of the French national certification for environmental services and soil remediation companies as well as the revision of the French standards about soil remediation terminology and practices. The project was developed in coordination with all stakeholders: small and large companies, government and environmental agencies.

Aurélie moved to Singapore in 2015. Concerned by the Haze, she has been volunteering with PM.Haze, an organization striving to stop the fires in Indonesia through communication about the Haze, responsible consumption and sustainable forestry.



## HISTORY OF THE FFVP, LEARNING FROM PAST EXPERIENCES

### APRIL's motivations

The Fire Free Village Program (FFVP) appears to have originated from APRIL's no burning policy for land clearance in 1993. Given the risk to their high value planted biological assets such as their standing Eucalyptus and Acacia plantations, the costs, liabilities and penalties associated with an uncontrolled fire

seems to heavily outweigh the benefits. Indeed, APRIL estimates damages caused by fire at around USD 140M from 2009 – 2015. This would be USD 20M per year additional to the USD 2-3M annually spent on firefighting teams and suppression, as well as the USD 6M for fire extinguishing equipment.



Kampar Peninsula location

### The Kampar Peninsula

The FFVP takes place in the Kampar Peninsula, located within Pelalawan District and Siak District, Riau Province. Kampar Peninsula includes some 700,000 hectares of low-lying lands mainly comprised of peat swamp forests and mangroves. Situated on the north bank of the Kampar River, it was originally only accessible by boat.

Kampar Peninsula is considered a key conservation site by many NGOs and the Government of Indonesia in particular, regarding wetland and forest conservation as well as birdlife, tigers and biodiversity conservation.

Since the 1970s, the majority of the Peninsula has been handed out as logging concessions to a number of companies which have cut canals through the peat to assist with extracting felled timber. 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.

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. Although detailed maps of community land use are currently lacking, preliminary surveys suggest that the communities make use of the majority of the Peninsula. The most intensive use is around the edges of the Peninsula, but the maze of lakes and waterways in the swamp forests means that regular use is made of resources even in the very heart of the Peninsula. Uses include hunting, charcoaling, fishing, rubber gardens, non-timber forest products extraction and small-scale farming. The residents also supplement their incomes with wage labouring for the concessionaires (oil, gas, logging and plantations). The communities emphasise their long ties with the land and retain strong customary rights in the area.

## PREVIOUS PROJECTS IN THE AREA AND LEARNING EXPERIENCES

### 2013 - Fire Alert Communities (Masyarakat Peduli Api) program

The Nature Conservation Office of the Riau Province has been conducting its own patrol activity in the fire-prone area since 2010. In July 2013, in collaboration with the Japan International Cooperation Agency (JICA), they launched the "Program of Community Development of Fires Control in Peat Land Area".

In Indonesia, as a countermeasure against land and forest fire, the Ministry of Forestry has been conducting fire-control activities through a Forest Fire Brigade called the "Manggala Agni", and has organized Fire Care Community Groups called the "Masyarakat Peduli Api (MPA)."

Over the years, APRIL trained and equipped at least 400 people in villages near its concession areas through its Fire Alert Communities (Masyarakat Peduli Api) program. Members of the Fire Alert Communities are mostly farmers and provided seedlings as well as fertilizers for their agriculture activities.

APRIL has been working with the communities to form Community Fire Awareness Program (Masyarakat Peduli Api), and provide training to the members for fire monitoring, fire patrol and early fire suppressions. Currently APRIL suppliers engage with 2,600 members of MPA in 220 villages.

### 2014 - The Village Incentive Program

APRIL launched its Village Incentive Program in July 2014 in an effort to mitigate the recurring fire and haze problem in Riau province. Teluk Meranti's successful fire prevention efforts were rewarded in November 2014 with IDR 100M. (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.

It can be noted that, without any fire prevention program, the number of fires usually increase from June to October as the dry season reaches its end. Here, after the start of the program in July, the number of total hectares burned in the four villages did not increase, but instead was significantly reduced from 97 hectares to 15.8 hectares.

# THE FIRE FREE VILLAGE PROGRAM

## Brief description

The Fire Free Village Program was officially launched in Pangkalan Kerinci on 28 July 2015 and is Riau's first comprehensive fire prevention plan that seeks to work from root causes collaboratively with the community.

In order to prevent the fires rather than suppressing or fighting them, this program involves all the concerned stakeholders. Initiated by APRIL, the Fire Free Village Program is executed in collaboration with two local NGOs, Rumah Pohon and Blue Green, and supported by the local government, police, military and Riau's Disaster Mitigation Agency.

APRIL's main plantation company in Riau is Riau Andalan Pulp and Paper (RAPP). Its pulp and paper mill and plantation operations are located in and around the major town of Pangkalan Kerinci, to the west of Kampar peninsula. The Fire Free Village Program involves 9 villages, within a 3km radius outside the company's plantation. Those villages were selected based on how fire-prone and influential they are.

The FFV Program Committee agreed to five separate projects for the Pilot Program, specifically;



**1. No Burn Village Rewards:** an extension of the previous year's Village Incentive Program that showed significant promise as means of incentivizing communities to stop using fire;



**2. Village Crew Leader:** 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 3 Smoke Haze Air Quality monitors and associated health information.

## October 2014 – Proposal for Fire Free Village Program

Building on MPA and the Village Incentive Program, 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 neighbouring communities. At this stage, it was anticipated that the project would take over 2 years in 5 to 6 villages, with an international partner as a collaborator.

## December 2014 – Program Charter

APRIL submits the detailed description of the program for internal approval. The 5 projects are already defined. The villages are not yet selected but the charter defines the requirement for selection.

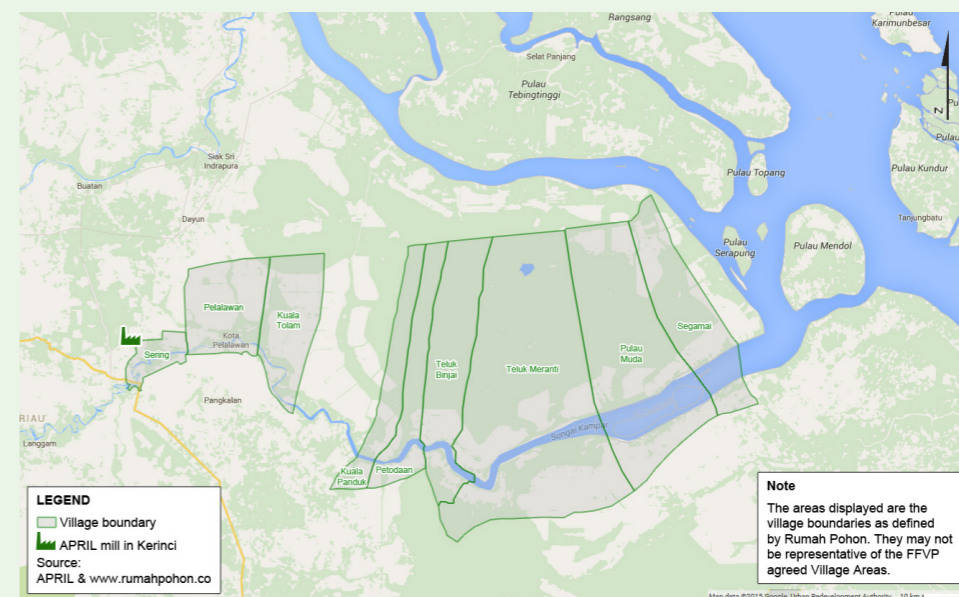
## January 2015 – Project manual

At the start of the program implementation, APRIL created the Fire Free Project Manual. An interesting part of this manual is the fact that APRIL used a root cause analysis to define SMART goals and work plans for each of the projects. Indeed, a well-recognized issue is that Indonesia tends to focus on fighting the fire rather than preventing it. Craig Tribolet, the FFVP manager in charge of the Village Crew Leader project, emphasized that "Fire fighting is the response; not the solution, it is like treating a cold with a box of tissues".

## Feb 2015 – Village selection

To select the villages, APRIL established risk maps around their concessions on 6 criteria: Actual fires, Land claims, Human activities, Accessibilities, Land cover and Incursion data.

The selection of the nine villages for the pilot project was from an initial pool of 72 villages across three separate Districts – Pelalawan (39 villages), Kuantan Singingi (14 villages) and Siak (19 villages). Each District was analysed by village area, hotspots from 2014, Burn Scars and the recently developed Risk Map, as well as existing Community Development networks. As a result of this analysis, and for logistical reasons, nine villages were identified along the Kampar River for the 2015 Pilot Project.



Location of the villages for the 2015 Fire Free Village Program



All 9 villages included in the pilot program were invited to sign a formal Memorandum of Understanding (MoU) in Kerinci, which included an agreed Village Area. Village areas ranged from the smallest (Segamai 3.2ha) to the largest (Teluk Meranti 159.3ha).

### July 2015 – Official launch of the program

The Fire Free Village Program was officially launched in Pangkalan Kerinci on 28 July 2015. The launch was attended by Riau interim governor, law enforcement officials, Pelalawan regent chief, Gen. TNI (ret.) Moeldoko and Anderson Tanoto, RGE Director. This event started a large communication campaign about the program.



Fire Free Village program launch attended by Riau interim governor, law enforcement officials, Pelalawan regent chief, Gen. TNI (ret.) Moeldoko and Anderson Tanoto, RGE Director.

## REVIEW OF 2015 RESULTS

The successful 2015 results are due to villages empowered across the 5 Projects via the setting of clear achievable goals, transparent responsibilities, commitment and endorsement from Government, ongoing support from corporate partners, realistic rewards and public recognition.

1. No Burn Village Rewards
2. Village Crew Leader
3. Sustainable Agricultural Assistance
4. Community Fire Awareness
5. Air Quality Monitoring

Across these 5 Projects, we then assessed their performance against 5 Key Performance Indicators (KPIs) which measured their strategic value and also reviewed the overall execution in feedback.

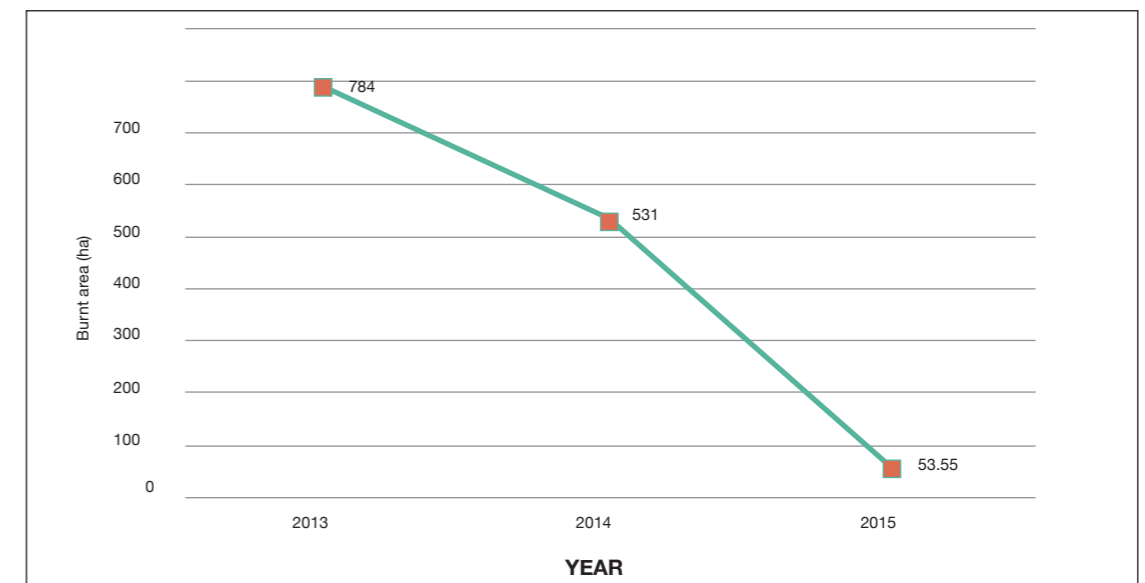
### KPI 1: Contribution to the reduction in burnt areas

The 2015 Pilot Program with the 9 communities across nearly 400,000ha of land resulted in a significant reduction in burnt area, from an unaudited estimate of

750ha in 2013 to only 50ha in 2015. This is a reduction of more than 90% so we have attempted to ascertain each Project's contribution to this successful reduction as a KPI.

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, and so APRIL has formed estimates on the historical burnt areas.

Calculations of the burnt areas are based on evidence from burn scar maps, aerial surveys, ground inspections and discussions with communities. APRIL then applied an estimate from this information gathering which indicates that during the fire season (July, August and September) these village areas conservatively would have then experienced between 3 – 7 fires every week during the July – September fire season. This equates to between 42 – 98 fires during the 14 weeks of the fire season. Based on these conservative estimates, around 531ha was burnt across village areas in 2014 and 784ha in 2013, although indications are that the area was much greater. The actual area reported in 2015 was based on groundtruthing in the field by Crew Leaders with burnt area mapping, monthly helicopter surveillance, reporting into public firefighting helplines, cooperative community reporting, and close engagement with MPA and Village Leadership.



FFV historical burnt area

Average burnt area across all nine villages in 2015 was 5.95ha which represents a significant decrease from our estimated burnt areas for 2013 (87ha) and 2014 (59ha). The decrease in average fire size between 2013 and 2014 may be associated with the first No Burn initiative.

**KPI 2: Contribution to short term positive engagement with local communities**

A key overall KPI is how quickly and openly embraced this program is by the local communities. Without strong rapid engagement and then positive adoption by the local communities, any initiative would be doomed to fail. One of the most telling indicators was the short term, nearly immediate local ownership and positive engagement with local communities. This KPI looks at the relative contribution of the 5 different projects to the short term engagement with local communities.

**KPI 3: Contribution to long term community cultural shift, education & mindset change**

Longer term reduction in fire and the ongoing maintenance of the success of FFVP will be reliant on a cultural shift away from burning to earn and education which will uncouple the association of land clearing by fires as a profitable long-term strategy. Ultimately, a mindset shift and reaching a tipping point across the community so that people start regarding burning as harmful to children, illegal and dangerous to the community will mean that old habits never return. An irrevocable social evolutionary step forward would have been made which would permanently enshrine FFVP. This KPI looks at the relative contribution of the 5 different projects to the long term community cultural shift, education levels and positive mindset change.

**KPI 4: Contribution to long term economic sustainability of local communities to earn not burn**

Ultimately as seen in the earlier part of this review, the true genius of this program is its intention to address the root cause of the problem and build a solution from first principles. Namely, that the only way to guarantee the wins from FFVP in the long term is to establish a clear path to long term economic sustainability without the need for any burning. When the economic risks outweigh the rewards to the village, and the need is replaced with prosperity uncoupled from burning and potentially even land clearing, the FFVP's successes will be enshrined in long term economic sustainability. This KPI looks at the relative contribution of the 5 different projects to the long term economic sustainability of the villages.

**KPI 5: Contribution to APRIL return on Investment**

As a pilot, the successes from the FFVP must be measured in a traditional way to provide shareholders and investment committees accountability for 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, 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 5 different projects to the ROI on APRIL's investment.

**REVIEW OF PROJECT 1 - NO BURN VILLAGE REWARDS**

**Hypothesis:** Could a visible reward unify and galvanize a message across a community? Village Leaders expressed their support for No Burn Village Rewards because they were provided a clear, tangible and achievable goal rather than a lofty ideal like carbon credits or a long term, hard to achieve and complex outcome such as economic development. Communities burn because it is a cheap and effective means of clearing land and there is little incentive not to burn. But would the rewards provide a clear path to payment of incentives for good fire management practices?



Monthly helicopter visual verification by APRIL staff looking for burn areas as seen in above right

**Budget:** IDR 100M. (USD 7,614) per village = Total of IDR 900M. (USD 68,524)

**Actual:** IDR 450M. (USD 34,262) total with 3 full rewards, 3 half rewards and 3 zero rewards.

**Project Manager:** Sailal Arimi

**Results:** Strong results and many key learnings. The first phase of this project covered the usual fire season: from July 1st to October 14th. Three villages received the full reward of IDR 100M, three villages maintained burnt areas below 1ha received a half-reward of IDR 50M, and the last three villages that did not receive any reward.

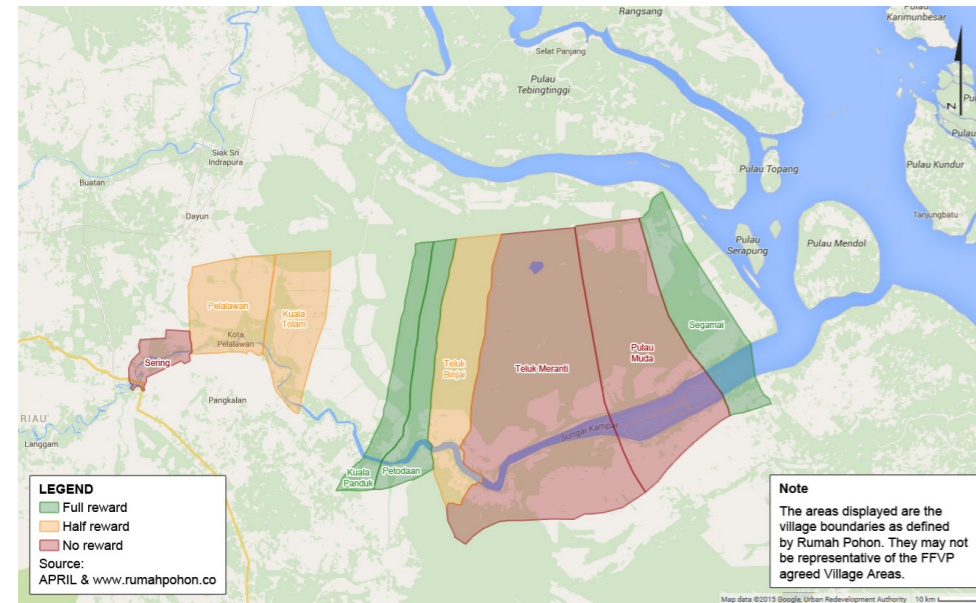
Village	Conservation (ha)	Community Land Area (ha)
Pelalawan		1,203
Sering		4,153
Kuala Tolam		2,691
Teluk Meranti	15,988	9,836
Teluk Binjai	2,981	740
Petodaan		409
Kuala Panduk		295
Pulau Muda	1,079	8,154
Segamai		2,537
<b>TOTAL</b>	<b>20,048</b>	<b>30,018</b>

2015 MoU Land Areas & Community Land Area's which tie to Village Rewards (Phase 1)



Some of the challenges facing an equitable distribution of rewards included the following variables: Large vs small village areas to monitor, accessibility of villages because they may be fishing towns or at a crossroads resulted in non-local residents which could start fires. In addition, some of the village areas overlapped with

many different sizes of conservation forest. Those conservation areas are ultimately meant to be managed and protected by the Ministry of Forestry. However, it was often found that fires were started in conservation forests given their vulnerability as they were not actively managed.



Village rewards for the 2015 Fire Free Village Program

Rewards were closely but not identically correlated to total land area, in that the two of the three smallest villages (Petodaan 5,809ha & Kuala Panduk 16,321ha) all achieved the reward while the two largest (Teluk

Meranti 159,286ha & Pulau Muda 112,347ha) both received no reward. In terms of burnt area as a proportion, however, there was no village that had fires affect more than 0.1% of their total area.

Village	Community Land Area (Ha)	Burnt Area (Ha)	Comment
Segamai	2,537	0.00	Full Reward
Petodaan	409	0.00	Full Reward
Kuala Panduk	295	0.00	Full Reward
Pelalawan	1,203	0.50	Half Reward
Kuala Tolam	2,691	0.15	Half Reward
Teluk Binjai	740	0.70	Half Reward
Sering	4,153	11.00	No Reward
Teluk Meranti	9,836	21.20	No Reward
Pulau Muda	8,154	20.00	No Reward

2015 Community Land Area's & Burnt Area which tie to Village Rewards (Phase 1) results

Here, of the three villages that failed to receive any reward, all were defending community land areas which were 4,153ha and above. Those which received the full reward were as small as 295ha which is 33 times smaller than the largest. However, there is no clear correlation as Teluk Binjai, which was protecting only 740ha, was only able to achieve a half reward. Moreover, much can be learnt from Segamai which received the full reward as it was protecting an area

of 2,537ha which is larger than two of the villages only receiving the half reward.

It can be noted that the results do not seem to be consistent from one year to another. Teluk Meranti, which was the most burned village in 2015, was also the only village to achieve zero burning during the 2014 Village Incentive Program. This would require deeper analysis, in particular regarding the origin of the fires.

Village	Fire Incident (January- June 2014)		After FFVP Program (July -September 2014)	
	# Incidents	Hectare	# Incidents	Hectare
Sering	3	12	2	10.02
Teluk Binjai	5	9	2	2.7
Teluk Meranti	2	6	ZERO	ZERO
Pulau Muda	3	70	2	3.1

A strong outcome was that clear parameters were provided and support given where needed, including education and supporting awareness materials from APRIL. Villages that did not achieve the full reward (either half or no reward) were disappointed but not in the company but rather in their own community and even in the Government for not originating such a Project. They recognized that the failure was related to the activities of their community and all expressed regret at the missed opportunity, and reinforced commitment to achieve the full reward in future years.

“For future improvement, I would like the flexibility to use the reward for things like a celebration party (Shoukuran) for achieving the goal which is also a chance to socialize the FFVP message and share the success and this message to next time win the reward with the community” said Village Leader Edi Arifin on 24 November 2015.

This empowerment and autonomy, where the villagers are given the ability to localize their own strategies and self-direct is important but took time. APRIL staff met each of the villagers at least 3 times and took 3 months to get to know them, let them define their own problems and agree to the course of action. APRIL behaved just as the facilitator not the decision maker.

“My area only got IDR 50M or 50% of the reward and I was disappointed as I believe that during the FFVP period there was no fire. But there was a peat fire deep down and it was burning from the beginning but they couldn't put it out as there was no equipment. We called for help but APRIL was fighting another fire so couldn't help. I didn't know where the fire was coming from. Next time, we will win the full reward.” Village Leader Edi Arifin 24 November 2015

This reward also was mutually beneficial to all villages so village heads were prepared to help one another or go as far as Kalimantan to share their experiences as it was not a binary outcome where one village won whilst another lost. It was also well-balanced as a project as there were no perverse incentives e.g. fire spotting rewards which could in fact encourage burning. This was a single collective shared outcome for a shared benefit.

There is a very strong empowerment factor from a prize rather than a handout which forces a greater sense of team spirit and competition. Rather than a paternal attitude, APRIL was supportive but challenged the leaders who were used to winning. To build further on this mentality, Village Leader Edi Arifin went further to show that he would be prepared to use part of his 50% reward to further socialize the FFVP intent to the community:

With the rewards not in cash but as a infrastructure and equipment, the Village Leaders could all share their success with the community without any fear of allegations of financial cash payments potentially being misused. Indeed, of the 2015 winners, some had asked for a local market to be build, security booths, community hall, mosque and firefighting equipment.



Based on this success the project has been extended to a Second Phase starting from November 1, 2015 through to April 30, 2016. Phase 2 is offering the original 9 villages the opportunity to earn a second round of IDR 100M.

- Rewards were highly visible, practical and achievable and well received
- Feedback from Village Leaders requested adjusting of the rewards so they could also be linked to community requirements and socialization of FFVP via celebratory events sharing the success;
- Village Leaders were successfully recognized and presented awards by the District leader (photo)
- Recommendations for bigger rewards for bigger village areas
- Recommendations on broader fire management practices as a basis for bonus rewards;
- Recommendations on appropriate additional community fire management requirements in future years to receive rewards



Village Leader Tomjon next to the Village secretary holding the certificate of achievement from the District Head Bupati with APRIL team members Sailal, Craig & MPA representatives and Crew Leader (25 November 2015)

**Project 1: Execution and Impact of No Burn Village Rewards**

KPI	IMPACT	EXECUTION BY VILLAGE
Contribution to the reduction in burnt areas	VERY HIGH	Rewards generated a lot of awareness as they were a viral word-of-mouth excitement generator which definitely resulted in a high contribution to reducing burnt areas via socialization of the dangers of burning, and to report burning if seen immediately.
Contribution to short term positive engagement with local communities	HIGH	Very high impact was generated as it gave the Village heads and the community a common goal to pull towards that also gave a purpose to talk about not burning, and showed APRIL cared in a way that Government, NGOs and big business had not shown before. Its realistic nature produced very positive rapid engagement "I shared the message via teachers and schools, the Imam and religious leaders, local elders and women speaking about No Burn and FFVP at every event I was invited to" said Village Head Yunus.
Contribution to long term community cultural shift, education & mindset change	MEDIUM	Long term shift to community mindset and attitudes to fire will depend on other subsequent initiatives but a powerful contributor. "I tell them about the risks and harm to health and about a case where fire is from another concession and destroys the next door plantation - if there is conflict like that then if there was lost profit then the person who burns has to pay but if discussion fails then the police get involved - this was before so at every event like the religious and village events and weddings, we remind them not to burn and now the community already knows it's dangerous and not permitted. We see it as a success as we fought hard and socialized to all of our community of the dangers of fire-based clearing." Village Head Tomjon.
Contribution to long term economic sustainability of local communities to earn not burn	LOW	Generally, Village heads have indicated that they will use their rewards for infrastructure such as Guard Posts to reduce theft in their village or Mini Striker motorized water pumping for fire fighting, which are not long term economic revenue generators.
Contribution to APRIL return on Investment	HIGH ROI	Given the 50% claim rate or IDR 450M or USD 34,262, the engagement, awareness, press coverage and word-of-mouth to drive prevention from this initiative was very high.
<b>OVERALL</b>	<b>VERY SUCCESSFUL AND HIGH IMPACT</b>	

## REVIEW OF PROJECT 2 - VILLAGE CREW LEADER

**Hypothesis:** Could APRIL's community engagement be improved by a shirt-wearing Village Crew Leader? What activities are needed to build up a continued period of engagement? How would the Village Crew Leader coordinate with the volunteer fire team of

the MPA and the Village Leaders? Village Leaders have shown support for this role as it provides a community member with an income and also support the administration and execution of the program.



LAPORAN KEGIATAN CREW LEADER  
PENDATAAN LAHAN YANG BELUM DITANAM

Nama Crew Leader: Diana Andri  
Desa: Desa Duri

No.	Tanggal	Nama Pemilik Lahan	Luas Lahan	Tanda Tangan
1	08-09-2015	ADIT	5 hektar	[Signature]
2		SABDU	2 hektar	[Signature]
3		WATI	2 hektar	[Signature]
4		WATI	1 hektar	[Signature]
5	12-09-2015	H. GUSRI	1 hektar	[Signature]
6		BUSHA	2 hektar	[Signature]
7		ROD	2 hektar	[Signature]
8		KRISTIA	3 hektar	[Signature]
9	02-09-2015			
10		DIHANI	1 hektar	[Signature]
11		SABRI	1 hektar	[Signature]
12		PURWATI	2 hektar	[Signature]
13		WATI	2 hektar	[Signature]
14	04-09-2015			
15		BUSHA	1 hektar	[Signature]
16		SABRI	2 hektar	[Signature]
17		USMAN HAJIMAN	2 hektar	[Signature]
18		USMAN	2 hektar	[Signature]
19		USMAN	2 hektar	[Signature]
20		SUNGGI	2 hektar	[Signature]
21	05-09-2015			
22		DIHANI	2 hektar	[Signature]
23		DIHANI	2 hektar	[Signature]
24		SABRI	2 hektar	[Signature]
25		T. PUS RUD	1 hektar	[Signature]

Ditandatangani oleh:  
[Signature]  
Kepala Desa

Bhabhakti sosial  
[Signature]

Village Crew Leaders in fire suppression with community and local police. On the right is the list of community members who need to clear land and how much land they need cleared. It then goes further to have them sign the document promising that they will not use fire to clear. This is a powerful promise and a moral obligation by APRIL and Village Crew Leaders to hold them accountable.

**Budget:** IDR 65M (USD 4,948) per village = Total of IDR 585M (USD 44,540)

**Actual:** IDR 487.5M (USD 37,117) as the late start meant that only 5 months active not 6 months

**Project Manager:** Craig Tribolet

**Results:** Strong results indicating that the Crew Leaders provided a strong platform to gain trust and commitment from community members to not burn. The collective list and signatories served as a very powerful and effective social pressure to not be publicly shamed by burning.

This program was developed by the diligent and highly competent Fire Prevention Manager, Sailal Arimi, who then implemented via the Crew Leaders who assisted him in the interviewing of members of the community to ascertain land ownership and intention to clear. By getting the signed commitments, to not develop the land by burning, from nearly 350 interviews and community members, APRIL effectively bound over 2,000ha recognized as potential burn risk areas. These areas are now targeted for agriculture assistance (Project 3).

Crew Leaders applying this social pressure becomes doubly effective when coupled with assisting the Village Leader in the preventative socialization of the risks of clearing land by fire. Interestingly, when the Village Leader was not accessible, the Crew Leader is

and provides a second pair of eyes on the ground for the FFVP.

*No one wants to burn now as we are scared of punishment and want the reward. We will continue to socialize, and the Crew Leader and MPA continue to spread the message. The clear reward is the FFVP, clear punishment is jail. So it's clear what they want to do" said Edi Hanafi MPA volunteer.*

Part of the success of Project 1 (No Burn Rewards) has to be attributed to the fact that communities now had access to dedicated, full-time Crew Leaders in the village and an increased level of patrol. Along with their fire preparation, patrol and suppression activities, Crew Leaders were also actively involved in working with local police to communicate with the communities. All Village Leaders praised their Crew Leaders.

The Crew Leaders also addressed the lack of fire preparation and suppression capability at the village level. By continually presenting their case, they reminded villagers of the potential risks and pending dangers. APRIL had previously made a significant commitment to developing this capability through training village fire teams (MPA) and donating firefighting equipment but there seems to be unclear platforms for borrowing, sharing or collaboration, and little coordination of this resource.

So the Crew Leaders were trained to lead crews and coordinate fire suppression activities. They were issued with firefighting gear that had to be managed to APRIL's standards and follow APRIL's SOPs for preparation activities as well as facilitating local fire management's continual improvement practices, and also play a lead role in preparing a consultative Village Fire Management Plan.

All 9 villages were able to provide suitable candidates for the village's Crew Leaders. APRIL interviewed at least 2 candidates for each position and chose the Crew Leaders based on their communication skills, access to leadership, and attitude towards the position. They all received training with local police recruits in basic fire suppression and were actively working in their village communities through the entire July – October fire season. All the Crew Leaders played a lead role in patrol and early fire detection, as well as in coordinating an effective suppression response. As the fire season draws to a close, the attention will shift to developing fire management plans in these village areas with a draft document due by end 2015.

However, an area needing improvement is better sharing or coordination of the equipment available. This issues was raised in several interviews by both MPA and Crew Leaders:

*"The water was 400m away but the hose was only 20m long! We would see the fires or someone from the community would see the fire and then would call the committee or the MPA or me the Crew Leader, I would then try to contact the land owner and then go*

Community Leaders strongly endorse the Crew Leader concept and recognize its value in assisting with fire prevention and their role in community leadership, engagement and education:

*"Crew Leaders are needed to support this whole program". Village Leader Yunus K.*



Village Crew Leaders working in collaboration with their community to identify fires in their landscapes – ownership of fires at the village level.



Project 2: Execution and Impact of Village Crew Leaders

KPI	IMPACT	EXECUTION BY VILLAGE
Contribution to the reduction in burnt areas	VERY HIGH	Having a local villager continually discussing the rewards and wearing the uniform generated a lot of awareness and also pre-emptively notified APRIL's liaison of the people who potentially needed to clear land and followed up with an MOU signed committing to not burn their areas. This definitely resulted in a high contribution to reducing burnt areas.
Contribution to short term positive engagement with local communities	HIGH	High impact as often the Crew Leaders were young and of the same networks as potential burners. Also as an aide to the MPA it provided a constant link to the community to APRIL and FFVP - in fact many Village Leaders went straight to the Crew Leader rather than MPA.
Contribution to long term community cultural shift, education & mindset change	MEDIUM	Long term shift to community mindset and attitudes to fire will depend on other subsequent initiatives but an important way to kickstart the process.
Contribution to long term economic sustainability of local communities to earn not burn	LOW WITH POTENTIAL	Originally, the Crew leader role was not intended as a long term economic revenue generator.  However, their role could potentially shift or extend into other community based campaigns such as Fire Free to Rubbish Free or even other grassroots based roles as a liaison for NGOs, Government and Corporations. Those initiatives could be economic revenue generators.
Contribution to APRIL return on Investment	HIGH ROI	USD 44,540.89 were projected however it was reported that only 5 months out of 6 were paid.:USD 37,117 is a low investment for the high ROI
<b>OVERALL</b>	<b>VERY SUCCESSFUL AND HIGH IMPACT</b>	

## REVIEW OF PROJECT 3 - SUSTAINABLE AGRICULTURAL ASSISTANCE

**Hypothesis:** Can we potentially create a long term view to earn not burn via agricultural assistance that can provide information to community about the fertility issues and nutrient damage from burning? Provide a decision support system for alternatives?

Provide access to appropriate equipment (heavy plant, light plant, and hand tools)? Provide access to relevant skills, expertise and subject matter experts to support alternative systems?



Swallow house that produces revenue and pays back investment in under 2 years (left) and prime rice cultivation in agricultural land, Kuala Panduk, with Bupati Pelalawan

**Budget:** IDR 3,386M (USD 110,160)

**Actual:** APRIL has yet to finish the full internal review, however extensive delays in deployment of equipment resulting from land tenure conflict in the due diligence process, incorrect equipment (Excavator PC-200, PC-100) and unused Seed Funding (repayable microfinance zero interest loan allocation) appear to indicate that this projected budget will change.

**Project Manager:** Achmad Johansyah

**Results:** What characterizes FFVP as a true leader is its focus on root causes and its pragmatic approach to long term solutions. Most other programs will request communities not use fires to clear but none provides a solution FFVP offers to subsidize and fund full mechanical land clearing for communities to open up areas for agriculture. Furthermore, the resourcing via FFVP partner University of Riau (UNRI) to provide 10 staff members to advise communities on the best potential crop fit and how to optimize yields is in theory, a great service.

However, in execution, it appears that this project has had limited success. It seems to have set goals which appear overly ambitious for 30ha to be cleared for each of the 9 villages and as a result of this time pressure encountered a number of significant issues. Mainly, due diligence processing land ownership is required from 3 levels of government before deploying land clearing teams. This lack of clarity around land ownership has uncovered 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 which is a legal buffer that cannot be cleared.

To the credit of the APRIL team, as a result of these challenges, agricultural assistance was then granted at a micro-level as individual plots were rarely over 3ha, so Hand Tractors and other hand tools were arranged to assist these small land holders with their agricultural activities.



Village	Agricultural Assistance	Agricultural Assistance Planned	Small Hand Tools
Pelalawan	20	0	68
Sering	20	0	42
Kuala Tolam	20	0	20
Teluk Meranti	0	20	230
Teluk Binjai	0	20	179
Petodaan	0	20	138
Kuala Panduk	20	0	0
Pulau Muda	0	20	240
Segamai	N/A	N/A	200

2015 Sustainable Agricultural Assistance per Village

There has been ongoing work from both UNRI (Universitas Riau) and APRIL Community Development officers to help local communities better understand sustainable farming practices which have been very well attended. However these are only at a very preliminary stage with data collection being completed in 9-12 November across several of the villages.

The Village Heads are empowered to determine which crop or revenue generator they choose. One example raised was where 20ha cleared will become 40 family plots of 0.5ha each and then villagers choose how to use their plot.

Given the sometimes extreme size difference in villages, this 20ha allocation limit and poor performance in delivery of land clearance or advisory services could prove to challenge the current relationship of trust further down the line.

Furthermore, another challenge is that although the University of Riau is meant to only offer advice on the best crop for the area with the villagers choosing what to grow, in the end, it seemed like villagers would defer to UNRI's superior agricultural knowledge which might be academic rather than economics driven. One example was the UNRI interest in rice potentially influencing 3 villages to now choose to grow rice, despite rice having little to no exportability or export income for the communities.

If the measurement of success is the number of fires in the area, then this Project played more of a figurative and confidence-building role as it offered a solution to

not clearing land by fire. However, actual delivery on this alternative to fire will prove both time consuming and potentially time/ financially expensive.

This Agricultural Assistance Project is the key future focus to ensure FFVP remains successful. We believe this will involve clarifying land conflicts, simplifying agricultural knowledge assistance, providing interest-free loans, connecting to APRIL's community development, and manage/ maintain community expectations which, if raised too high, could result in disappointment, loss of faith and a turning back to fire as a mode of land clearing.

Given the significant delays in gaining clear community agreement, APRIL has acknowledged that management of this project has been inadequate and will gain an additional team member and local NGO to help liaise with local community decisions from mid-November 2015. A key starting point could also be connected to the good work regarding the land rights and commitments solicited by Crew Leaders, as the project maps were often the first time that local communities had seen their village area in the context of other land uses, including overlapping concession areas and conservation areas.

Finally, as seen in the Swallow houses, the future economic drivers may not be connected to land clearing and excavators, but may exist in localized entrepreneurship and adapting organisations like MPA and the Crew Leaders towards entrepreneurship training which allows for a wider set of options to be pursued, and fewer fires.

### Project 3: Execution and Impact of the Sustainable Agricultural Assistance

KPI	IMPACT	EXECUTION BY VILLAGE
Contribution to the reduction in burnt areas	MEDIUM	Ambitious target to clear 30ha x 9 villages, or a total of 270ha, but only ended up clearing 80ha, with a total of 100ha likely by 2015. Encountered land tenure issues and equipment misalignment. However, that there was this alternative no matter how slow, provided comfort to villagers, who might consider burning, to wait.
Contribution to short term positive engagement with local communities	MEDIUM	Impact was largely because APRIL and FFVP offered realistic options and didn't say don't burn without an alternative. <i>"FFVP didn't say don't burn, then didn't offer us an alternative. Instead FFVP and APRIL are the first companies to say there is an alternative and we will help you with it."</i> Village Leader Tomjon.
Contribution to long term community cultural shift, education & mindset change	VERY HIGH POTENTIAL	To quote the Village Leader Edi "Only when our bellies are full can we worry about social issues". FFVP will fail in the long term without alternative sustainable income from agriculture without the need for burning. This is a key component but has not been successfully implemented yet. <i>"As the village head I have been encouraging swallow bird houses which are owned by the community and generate revenue from collecting the bird nest for Chinese medicine. They can produce 2kg per house per month and then sell to Kerinci for IDR 8.5M. rp per kg for high quality and IDR 6.5M for medium quality and IDR 5.5M for low quality. IDR 80M to set up so payback in under 2 years including construction."</i> said Village Leader Tomjon.
Contribution to long term economic sustainability of local communities to earn not burn	MEDIUM	Successful execution of an effective agricultural assistance strategy will be critical for the long term avoidance of burning. As seen with swallow nests or finding non burning economic sustainability, the potential impact is significant. However, up until now, execution still needs to be improved.
Contribution to APRIL return on Investment	YET TO BE DETERMINED	Yet to be determined as money has not been fully deployed and insufficient examples or data on results.
<b>OVERALL</b>		<b>LOW SUCCESS BUT HIGH POTENTIAL</b>

## REVIEW OF PROJECT 4 - COMMUNITY FIRE AWARENESS

Hypothesis: How effective will community awareness of FFVP be for future supportive relationship-building for APRIL in villages, in cities, and with activists and students? How effective are socialization materials such as flyers, booklets, signage, banners, billboards? How effective is it to provide socialization materials through

media printed and online (news, features, advertorials, documentary and comics)? What is the effectiveness of campaign activities like expeditions to the forest areas, APRIL's technology centre, villages, seminars, workshops, cycling or music concerts?



Shirts are iconic, red and clear, so on Twitter and social media they get big uptake, FFV Official Opening, July 2015 Kerinci

**Budget:** IDR 565M (USD 28,551.85)

**Project Manager:** Djarot Handoko

**Results:** From our review, it seems there are two or three very different goals which make the intention of a socialization and communication program to reduce fires somewhat more complex to measure. Some goals range from educating the community and communicating about the program, to long term engagement of activists, students and urban residents. The results seem to focus more on local, national and international media coverage, and less about education but there has been overlap which has resulted in some amplification to help villagers attain recognition and thus reinforce positive behaviour.

Furthermore from our review, the actual ROI was difficult to ascertain accurately because the Corporate Communications and External Affairs Teams (Kerinci, Jakarta and Singapore) have all provided exceptional support to the FFVP which has not been included in the

above project cost budget. This assistance started with coordinating the official opening with a number of high profile VVIP and national and international media, to providing even greater buy-in from local leaders and community commitment, as well as assisting with the production of signages for local communities. The program has received widespread press coverage at the local, national and international level, and the team has had a number of opportunities to present at national and international conferences—all of which reinforce the engagement and prestige of those involved on the ground.

As part of the review, we called the FFVP Fire Helpline as appears on the shirt and found that it was answered. In fact, the red shirts are iconic with the helpline numbers clearly marked. This resulted in some unintended consequences as communicated by Project Leader Craig Tribolet: "Interestingly the APRIL hotline for fire assistance has now become a national symbol and APRIL's Fire Suppression team has been called for help with a fire in Java!"

The PR campaign has been well-executed and reached large audiences. However, this was buoyed by the El Nino Haze which caused the international community to apply huge pressure on the Indonesian Government to regulate. In the future, as the media grow familiar with FFVP, there will need to be new and different approaches to stories to continue highlighting the FFVP. The willingness of the Village Leaders to help their counterparts in South Sumatra, Jambi and Kalimantan could be one such story. Highlighting success stories within FFVP should happen now.

On the less positive note, some of the more experimental communication strategies by NGOs,

such as documentaries, comic books and events have yet to be executed or viewed, so we are unable to comment on their effectiveness.

However, the long-range nature of these types of investments seems to exceed the current lifecycle of this project, meaning that immediate ROI and value-add may be low. Also with the international coverage and interest in any Haze stories, let alone one as comprehensive and successful as FFVP, PR coverage has been both abundant and easy to generate. Maintaining interest in the program as it expands and news cycle shifts from the Indonesian Haze Crisis will be difficult.

"Of course I would go and share my learnings with villages in Kalimantan, when do you want to go?"

said Village Leader Yunus.



Pak Rudy Fajar, Director of RAPP, continuously socializing the hazards of haze and its implication to health after Friday prayers



Project 4: Execution and Impact of the Community Fire Awareness

KPI	IMPACT	EXECUTION BY VILLAGE
Contribution to the reduction in burnt areas	LOW	Community awareness via communications, public relations and media marketing is divided into 3 strategies:  The first is for city based residents of Riau and this was a mixed bag of initiatives ranging from comic books, to documentaries, to TV shows, to focus groups undertaken by the NGO Blue Green. This seems to have a questionable success rate and lower impact on the issue of burning.
	HIGH	The second strategy was PR and communications on social media and press, this was overwhelmingly successful generating significant hits.
	HIGH	The third strategy was the flyers, shirts and banners to reach villagers that were accompanied by the Crew Leaders and Village Leaders. This direct communication definitely resulted in a high contribution to reducing burnt areas.
Contribution to short term positive engagement with local communities	HIGH	Cities campaigns generated great press coverage and high short term positive engagement for FFVP as did the rural collateral like hats and shirts definitely resulted in great media pickups for the press.  <i>"Interestingly the APRIL hotline for fire assistance has now become a national symbol and APRIL's Fire Suppression team has been called for help with a fire in Java!" Craig.</i>
Contribution to long term community cultural shift, education & mindset change	MEDIUM TO HIGH	The PR campaign has been well-executed and reached large audiences, however this was buoyed by the El Nino Haze which caused the international community to apply huge pressure on the Indonesian Government to regulate. In the future, as the media grow familiar with FFVP, there will need to be new and different approaches to stories to continue to highlight the FFVP. The willingness of the Village Leaders to help their counterparts in South Sumatra, Jambi and Kalimantan could be one such story.  <i>"Of course I would go and share my learnings with villages in Kalimantan, when do you want to go?" said Village Leader Yunus.</i>  Highlighting success stories within FFVP should happen now.
Contribution to long term economic sustainability of local communities to earn not burn	LOW	Currently there is minimal contribution to long term economic growth for the local communities from the Community Awareness. However if the press coverage resulted in other private companies, international donors or Indonesian Government funding FFVP or similar programs for villages, then this could change significantly. APRIL could lead this movement.
Contribution to APRIL return on Investment	HIGH ROI	The USD 9,517 on the program shirts, hats, booklets, flyers and banners were highly effective for local socialization. However it is yet to be seen if the Blue Green spend of USD 19,034 will yield effective documentary, comic book or tv coverage which they have undertaken. Given the total USD 28,552 investment, the engagement, awareness, press coverage and word-of-mouth from this initiative was very high.
OVERALL		VERY SUCCESSFUL PR HIGH IMPACT VILLAGE CAMPAIGN, HOWEVER ORIGINAL CONTENT IS YET TO BE SEEN

REVIEW OF PROJECT 5 - AIR QUALITY MONITORING

**Hypothesis:** It is clear that the World Health Organisation's recommendations on healthy, unhealthy and dangerous levels of air pollution are not widely known in Indonesia. The implementation of Air Quality Monitoring equipment is to both research air quality and monitor, measure and track fires. Could FFVP develop a partnership with experienced air quality monitor agency? Could FFVP investigate viable monitoring sites? Could FFVP develop protocols and operational procedures for air quality monitoring and reporting and install measurement systems and commence monitoring? Could FFVP also start providing public information and develop a reporting platform with appropriate air quality health messages?



Fire Prevention Manager, Saial Arimi servicing Dust Sentry

**Budget:** IDR 833M or (USD 63,438)

**Project Manager:** Craig Tribolet

**Results:** Three Aeroqual Dust Sentry Air Quality Monitors were installed at Meranti Estate Office (lowland), Teso Estate Office (mineral soil) and Kerinci Fiber Office in August 2015. Equipment was delayed

as the manufacturer was undertaking a significant software update at the time of order. The equipment has successfully monitored Particulate Matter PM10 levels, which is closely related to smoke from forest fires, for the 2015 fire season and recorded PM10 24 hour levels of over 1,800 µg/m3 (Teso, 21 Oct) and 1,400 µg/m3 (Meranti, 5 Sept).



PM10 Haze Monitoring in Kerinci at the peak of Haze season, not one day did the haze levels drop below the WHO health standards

World Health Organ  
US EPA  
Indonesia

It was reported that the haze monitoring equipment became a very important tool in assisting the Kerinci Haze Response in day-to-day management and preparations during the recent season. Having access to live data also assisted in dispelling some myths around haze – particularly the issue of correlating

visibility with PM10 levels (moisture and dust make this impossible) and the impact of rain in reducing haze levels (no correlation). It also assisted in demonstrating that fires in APRIL's Estates were having a negligible influence on regional haze levels and that that large fires in South Sumatra and Jambi were the key source of haze.



Smoke from the haze has significant social, environmental and health impacts on local communities but there is no current measurement or reporting of haze levels from APRIL's Estates. As a result there is no local benchmark data or ability to measure whether there is any improvement in haze conditions. Over the long term, if the community was accustomed to information showing when burning was dangerous to their children, this could be a powerful cultural shifter.

*"I do not understand PMI or PSI or PM, but if APRIL shared this Haze information to tell me when the air and smoke is Safe, Unhealthy, Dangerous via SMS or on a signage, then I would be very grateful" Village Head Yunus*

An automated reporting system linked to specific health warnings was developed but put on hold by management during the peak of the recent haze crisis. This will be reviewed and made available online to automatically report in February 2016 which would provide clarity, education and transparency to the causal link between fires and harmful pollution.

*"In my village, 1 person died and 1 person with asthma is in hospital. They would be interested in the monitoring of the air but I don't know what PM10 is but a clear sign with colours is good"*

said Village Head Edi.

#### Project 5: Execution and Impact of Air Quality Monitoring

KPI	IMPACT	AIR QUALITY MONITORING
Contribution to the reduction in burnt areas	N/A	With the installation of the first 3 measuring devices only for data collection and tracking, this has a low contribution to reducing burnt areas. An awareness campaign is yet to be launched that would link detrimental health effects to burning land.
Contribution to short term positive engagement with local communities	N/A	No data has been shared so no short term engagement has been achieved. However when asked, Village Leaders indicated:  <i>"I do not understand PMI or PSI or PM, but if APRIL shared this Haze information to tell me when the air and smoke is Safe, Unhealthy, Dangerous via SMS or on a sign, then I would be very grateful" Village Head Yunus</i>
Contribution to long term community cultural shift, education & mindset change	HIGH	Long term if the community was accustomed to information showing when burning was dangerous to their children, then this could be a powerful cultural shifter.  <i>"In my village 1 person died and 1 person with asthma is in hospital. They would be interested in the monitoring of the air but I don't know what PM10 is but a clear sign with colours is good" Village Head Edi</i>
Contribution to long term economic sustainability of local communities to earn not burn	LOW	Unlikely to assist with long term economic development.
Contribution to APRIL return on Investment	LOW ROI	USD 63,438 for 3 units is good information which is defensible evidence to show APRIL is not polluting but low ROI relative to the returns on other investments
OVERALL		IMPLEMENTED BUT NOT SHARED PUBLICLY & MEDIUM IMPACT

## CLOSING REMARKS BY THE AUTHOR

This year has proved to be a disastrous year for Indonesian fires and the ASEAN Haze. Data from NASA estimates that up to 2.1M ha of Indonesian forests were burnt, causing smallholders and industrial plantations to suffer losses in the billions. It was reported that there were 500,000 respiratory cases as tCO2e emissions reached 1 billion. These fires likely reduced the number of Borneo orangutans by 30%. Moreover, on 12 November 2015, the world's atmospheric greenhouse gasses reached 400 ppm, well past a dangerous tipping point. In short, the fire and haze crisis was elevated from a local scale crisis to a global crisis.

Considering the seriousness of the fire and haze crisis, I was surprised to find the FFVP as the most comprehensive and programmatic solution that I have seen in the 9 years we have worked in conservation and climate change. Upon seeing the enthusiasm of the local communities, the real tangible assistance from responsible corporate partners, and support from NGOs and encouragement from Governments at Village, District and Province levels, we believe the FFVP is beginning to really address the root cause of the fires.

By engaging people from the leaders down to the rural farmers in real dialogue, offering clear alternatives to burning, having a responsive Fire Help Line and transparent prizes as an incentive for good performance, FFVP has earned the trust and respect of the key stakeholders. In addition, by transparently communicating, reviewing and encouraging communities to adopt a higher order of sustainable development whilst standing shoulder-to-shoulder with villages during fire seasons, we believe APRIL has gone beyond the normal call of duty of a responsible corporation.

From interviewing APRIL's senior management and the operational team that conceived FFVP, it is clear that they have adopted a rapid prototyping, flexible and agile startup methodology which is more reminiscent of a Silicon Valley tech startup than an agro forestry paper pulp behemoth. Credit should go to Anderson Tanoto, Rudi Fajar and PM Periasamy for providing the leadership and financial support to FFVP. As a younger generation leader, Anderson Tanoto has provided the high level of authority to experiment and has encouraged the diverse skills of a fantastic skunkworks team led by Craig Tribolet. Craig is a charismatic, inclusive, collaborative, committed and communicative Australian landscape ecologist, firefighter and experienced forester. Sailal

Arimi, with his local connections and on the ground hustle, commitment and extensive personable genuine warmth, and Djarot Handoko's diverse public relations and communications skills, together with many other APRIL team members, have fostered a genuine partnership and authentic buy-in from local communities, village leaders and Governments. FFVP has had a high impact and an excellent start with dramatic reductions in the areas burnt in those 9 villages.

In the review process, APRIL has shared that it hopes to expand to more villages with a further 11 villages added to the pilot 9 and then a further 55 to commence in an initial engagement, communication and educational process to screen for suitability for future FFVP expansion. However, this is where the role of a single corporation as a Provincial fire prevention agency might be questioned by shareholders as a valid use of corporate funds. Where is the sustainable economic model? How can this continue to be funded? What are the alternative sustainable funding options?

It is to these questions that we must query how District and Provincial Government financial participation can be encouraged. In 2015, the Riau Province only spent IDR 1.4 billion (USD 103,700) for an entire year of fire prevention and suppression. This is far less than the estimated USD 4M in suppression and USD 329,732 budgeted for FFVP. The FFVP budget did not include the significant APRIL resources, but including all salaries and ancillary costs not included in the FFVP budget, such as helicopter operations and communications.

Furthermore, one must also call into question the potential financial contributions from the National Government considering that Indonesia's fires were the cause of President Jokowi's early return from the USA and the considerable funding set aside for Indonesia by the international community.

Norway will set aside USD 1 billion for Indonesia's forestry conservation efforts. ADB, World Bank, USAID and AUSAID's have budgets for climate change support. Perhaps by considering that COP 21 is the 8th year anniversary of the Bali Roadmap, it is time for a FFVP led Fire Free Fund to be established to scale this effort? Given that all Village Leaders were excited to share their successes and failures with their counterparts in Jambi, South Sumatra and Kalimantan where fires continue to rage, perhaps FFVP could be the start of something bigger which is incubated in APRIL and piloted in Riau?

On the ground, there are still many significant challenges to be overcome, such as poverty, lack of government enforcement and land conflicts. This year has been particularly challenging as the El Niño caused the dry season to be drier and longer than usual. In the long term, FFVP's success can only be ensured by providing clear platforms for communities to develop economically and thus continually implement the 'earn not burn' method. This means that significant improvement and expansion of the Agricultural Assistance Project will need to include non-agricultural revenues and education.

So whilst the contribution to reductions in burning via financial rewards, training of Crew Leaders and equipping MPA volunteer fire fighters and raising of community awareness in the short term are very high, in the long term, the 'earn not burn' solutions and poverty reduction need to involve stronger mechanical land clearing, entrepreneurial education, agricultural assistance and funding. APRIL has engaged the University of Riau, but should APRIL be responsible

for this alone? Or can FFVP involve other corporate sponsors, local and global Governments, international funds and even international residents who may see this as a mutual donation to reduce the Haze?

John F. Kennedy once said: "Our problems are man-made, therefore they may be solved by man. And man can be as big as he wants. No problem of human destiny is beyond human beings."

In Indonesia, fire is 99% a man-made problem. APRIL with the FFVP has sought to engage not the symptom, which is the fire, but the root causes. Short term, the impact has been real and significant, but it may be too early to assess the FFVP's long term contribution to the community's cultural shift, education & mindset change. However, based on what we have seen in this review and from the positive response from the community, there have been many things to learn. With the successes in the 2015 FFVP Pilot, there is great potential for the future.

