

# IT TAKES A VILLAGE...

## HOW AN INDONESIAN COMMUNITY KEEPS PEAT FIRES IN CHECK

By Noor Azura Ahmad

**O**n the northern bank of the Indragiri River in Riau, Sumatra lies a village that looks like many others, though it is inhabited by some of the most progressive people on the island. Harapan Jaya is divided into four sub-villages and is home to over 2000 villagers. Opened in the 1980s, the village is populated by farmers from Java, Kalimantan and Sulawesi who moved under the Indonesian Government's transmigration programme.

While Harapan Jaya has schools; electricity, water supply and roads are still lacking. With no bridge over this section of the Indragiri River, locals cross the river on boats called 'pompongs' which can accommodate motorcycles. This is the main mode of transport in the village. Cars and trucks have to use a bridge further away.



Passengers boarding a pompong.

### A CHALLENGING ENVIRONMENT

The main occupation here is agriculture, with palm oil and rubber being the main commercial crops. The raw harvest is sold to middlemen who transport them to the closest factories. Subsistence crops especially rice and palawija (the secondary crop planted after rice is harvested) such as pumpkin, tapioca, sweet potatoes, corn and fruits are planted for personal consumption and for the local market.

Fish from surrounding rivers supplement their diet. Catfish reared in ponds can be smoked and sold in nearby towns to supplement their income. Others work as labourers at neighbouring pulp and paper plantations.

Being from Java where the earth is rich volcanic soil, many of the pioneers faced a culture shock when they moved to the site which is on deep peat. The land was swampy with acidic water, affecting the crops. They struggled to grow rice on unsuitable land.

In a stretch near the river, the land was good for planting rice. However, a poorly planned drainage project made the rice area too dry and rubber plots too wet. Improper management created acid sulphate soils that are toxic to plants.

The problem was exacerbated by the lack of technical knowledge on nutrient and hydrological management methods. One reason fire is employed is because chemical fertilisers are priced beyond the means of the village farmers. Ash from burning weeds and waste is alkaline, helping to neutralise the acidic soil and provide some of the deficient nutrients.

Poorly planned canals overly drain the soil, making it prone to fire. With two dry seasons and use of fire for disposing of agricultural waste, this became a serious problem. Left unattended, the fires could destroy large areas of farmland and affect human health. Occasionally, there were fatalities resulting from the thick smoke and haze.

## FINDING SOLUTIONS

Years later, the community was still struggling to thrive in their new environment. In 2012, the SEApeat project, supported by the European Union (EU), engaged with the villagers to help them find solutions and encourage sustainable management of peatlands in the area.

One of the first things they did was to map the topography of the area. The villagers themselves helped to take GPS readings and draw a map so that experts can help figure out how the problem can be corrected. Following this, some canals were blocked and others opened to correct the hydrological balance. Subsequently, rice paddies could be planted again, with good yields.

An interesting solution they came up with was to create **Village Regulations (Peraturan desa/Perdes)** related to runaway fires in 2011. According to the rules, the person who starts a wildfire due to negligence will have to compensate their affected neighbours. A fine is levied for each tree damaged by the fires that they caused. An oil palm tree is valued at IDR 350,000 and rubber trees are IDR 100,000 each. The penalty could come to a hefty sum if a large area is burned. Therefore everyone keeps an eye on fires when they burn tree cuttings and weeds. This resulted in a drastic reduction of the number of wildfires.

Harapan Jaya villagers employ various technologies to manage fire risks and communicate with their neighbours. One of the most important tools employed is the **Fire Danger Rating System (FDRS)** readings. FDRS is a computer system which calculates the risk of fires starting based on wind speed, moisture, fine fuel and other factors. Run by the Indonesian National Institute of Aeronautics and Space (LAPAN), the system generates a map which shows the fire risk rating over the area. To translate this to farmers on the ground, FDRS boards are used to indicate the current fire risk rating. The current FDRS reading is updated daily by the community. Everyone is informed not to use fire when the rating is yellow or red.

To disseminate information, a local radio station called Selasih FM was created. Apart from entertaining the villagers and spreading breaking news, the radio also creates awareness by discussing best management practices for agriculture on peatlands, hydrological management and related matters. Unfortunately the channel has been down since the mixer got damaged by lightning. Efforts to get the channel back up are hampered by the lack of electronic service centres in the remote district.

The radio service would not be so critical if internet access in the village was better. At the moment, service to the

area is limited and unreliable. Their website and Facebook account shares news on events and activities. Harapan Jaya also appears on Wikipedia Indonesia.

To reduce the usage of fire and address the problem of fertilisers, a **Cattle, Biogas and Fertiliser Project (SISKA)** was started to produce fertiliser for crops and biogas for cooking. Under this project, cattle are fed with oil palm fronds and their waste is channelled into a digester to produce methane gas. The post-processed waste is collected for fertiliser. This reduces the dependence on expensive chemical fertilisers and ash from burning agricultural waste.



*Establishing the foundation of the SISKA project.*

The precursor to **Masyarakat Peduli Api (MPA)**, a community fire brigade, was formed way back in 2003 but was inoperational for years due to a serious lack of funds. Every time a fire broke out, owners and some friends would try to contain the blaze using small Robin pumps. Quite often, the pumps would die out before the fires do.

In 2012, a pulp and paper company contributed firefighting clothes and shoes to the community; but no pumps, hoses or equipment. Again, the team could not do much to manage fires. Later, from 2012, Yayasan Mitra Insani and EU contributed water pumps and equipment via the SEApeat project. The Government's Nature Conservation Agency (BKSDA) then trained the MPA team in the proper use of equipment and firefighting techniques.



*Fire patrol training.*

Harapan Jaya's firefighting team is now a certified MPA that also helps put out fires in the neighbouring villages of Bayas and Kemuning.



*Harapan Jaya's fire brigade community and trainers.*

## LINGERING ISSUES

**Maintaining the canal blocks** can be difficult. Many have been built over the years, but currently only five blocks are in good condition. Others have deteriorated and several were washed away by heavy rains. The villagers have no specific funds to rebuild and maintain damaged structures. This makes hydrological management less than ideal. Some parts of the village are still regularly flooded.



*A glimpse of the canal block construction process.*

**Underpowered equipment:** The current pumps used by MPA are not quite powerful enough to fight large fires and need to be pumped for a longer time to be effective, increasing the cost of fuel and workforce. They need better pumps that are able to quickly douse fires before they spread. Sometimes better pumps are loaned by the plantation company, but this is a temporary measure.

**Costs:** MPA activities require funds for patrolling, operation and maintenance, but there is no aid provided by the government. To help support costs, the team planted pineapples. Funds raised from selling the fruits were supposed to cover MPA costs, but fruits are often stolen by people who pass through the land. In the meantime, MPA charges landowners IDR 500,000-1,000,000 as compensation for putting out fires on their lands.

**Workforce:** Community firefighters often worry about their land and crops while fighting fires. They receive little compensation and often fork out their own money to fuel the pumps and cover running costs. To offset this, a claims system should be set up, perhaps funded by the compensation pool.

## DOCUMENTATION AND FUTURE PLANS

To help document and guide fire management efforts in the village, a Best Management Practices booklet was produced in 2014. An updated version was produced the following year. The books are written in a narrative style, containing case studies and comments by villagers. They highlight the peatland management and fire control measures that have been implemented. The second book was reorganised in concise snippets which are more direct and action-oriented. (A copy can be downloaded at [http://www.aseanpeat.net/view\\_file.cfm?fileid=578](http://www.aseanpeat.net/view_file.cfm?fileid=578).)

A video was made to showcase the local community efforts towards a more sustainable future. (On YouTube, search for "Menuju Desa Berdaya Pulih.")

The enterprising villagers often explore new ideas to improve their standard of living and fund firefighting efforts. Currently there is a campaign to grow organic vegetables which are healthier for their families. These are grown in small garden patches using recycled tyres and containers. They are also keen to start a homestay business, but this is currently on hold as they are too far away from major cities.

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