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GREEN HEART

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GREEN HEART

COVER
Photo: © WWF-Malaysia / Zora Chan
Lun Bawang women from the highlands of Long Semadoh, Sarawak, are all smiles as they get ready to welcome guests to their village. Please see pages 5 to 8.

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WWF-Malaysia, the national conservation trust, currently runs more than 90 projects covering a diverse range of environmental protection and nature conservation work. Since 1972, WWF-Malaysia has worked on important conservation projects, from saving endangered species such as tigers and turtles, to protecting our highland forests, rivers and seas.

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Hand in Hand: Working with Rural Communities

By Ezen Chan, Sarawak Conservation Programme Communications Officer


Photo: © WWF-Malaysia / Edwin Meru

Many natural ecosystems and high biodiversity areas in Sarawak are under threat. These areas are also home to Rural Communities, whose livelihoods and cultures are closely dependent on them.

In order to sustain the ecosystems, a balance is needed between nature and communities' need so that both can co-exist in harmony. Otherwise, habitat degradation and loss of biodiversity will cause adverse impacts on these people's livelihoods.

WWF-Malaysia believes that conservation works effectively when communities are willing to participate actively in sustainable practices of land uses and be co-stewards with Mother Nature. Communities' traditional knowledge also embodies a wealth of wisdom and experience in nature, thus adding more value to conservation. This is why we engage and work closely with rural communities towards practical and potential solutions to manage natural resources sustainably. ■

Who are the communities we work with?

- **Lun Bawang**
  - Riverbank restoration
  - Sustainable rice farming
- **Iban**
  - Sustainable *Gaharu* planting
  - Fish assessment & *Tagang* project
  - Community pepper project
  - Panda CLICK!
- **Penan**
  - Rattan and sago replanting
  - Supporting handicraft development
  - Good farming practices
- **Melanau**
  - Irrawaddy dolphin and fish assessment

How do we involve communities in conservation?

Purpose

Empowering rural communities to implement best management practices for the benefits of ecosystems and improving livelihoods.

Working with government agencies and other partners, to help communities to better understand best management practices.

Building awareness among communities about the importance of forest and freshwater conservation.

Step by step

1. Identify and prioritise communities within project sites.
2. Participatory consultation with identified communities.
3. Identify potential livelihoods and conservation projects together.
4. Develop capacity building programme to improve skills and knowledge.
5. Implement projects together with monitoring activities.

Empowering Pepper Farmers Toward Sustainable Farming

By Diana Chendai, Sarawak Conservation Programme
Community Engagement and Education Officer

Photo: © WWF-Malaysia / Zora Chan

Pepper.

Introducing green economy through pepper

As part of the Green Economy in the Heart of Borneo project, a pepper planting and marketing initiative were piloted with two local communities in Song-Katibas. The data from a Social Impact Assessment (SIA) determining communities' interests showed they are interested in developing their skills and knowledge in pepper farming and marketing. The availability of a workforce, suitable site, institutional support, environmental protection, accessibility, marketability and economic potential made pepper a viable choice to implement the green economy concept.

The community pepper project will utilise available fallow land. It aims to promote green economy by empowering the people with sustainable farming knowledge, for example, best management practices (BMP). This will enable them to manage their natural resources in an environment-friendly manner and at the same time, improve their livelihoods and lifestyles.

Watch Green Economy in the Heart of Borneo.

Photo: © WWF-Malaysia / Samantha Liew

Capacity building on pepper cuttings and sustainable farm management.

The communities join forces in conservation

WWF-Malaysia works with two longhouse communities in Song-Katibas area, Rumah Dagum and Rumah Peter. We provide these communities with support in kind and capacity-development in BMP.

Currently, our involvement with the communities are at different stages as they have different needs. Rumah Dagum is the biggest pepper producer in the Song-Katibas area but they do not have good access to the market. On the other hand, Rumah Peter has younger workforce who is able to establish pepper farms and improve existing ones to adopt BMP. ■

Photo: © WWF-Malaysia / Fiona Maurice

Construction of pepper storage facility at Rumah Dagum.

Photo: ©WWF-Malaysia / Mazidi Ghani

Rumah Dagum

- improve pepper processing and storage facilities
- develop marketing strategy
- improve packaging, thus increasing retail value
- build capacity in pepper processing, storage and marketing

Rumah Peter

- assist farmers in establishing pepper farms
- improve existing farming practices
- build knowledge on organic pepper planting and maintenance techniques

Green economy community pepper project

Aerial view of the project site.

Photo: © WWF-Malaysia / Ezen Chan

Interested farmers working on a trial plot in Long Langai to experience the difference between traditional and SRI farming methods.

Rice Farming: The Sustainable Way

By Ezen Chan, Sarawak Conservation Programme Communications Officer

WWF-Malaysia's Community Engagement and Education (CEE) programme in Sarawak is working closely with the Lun Bawang community in a quaint village, Long Langai, Ba' Kelalan to promote sustainable farming of their fragrant Adan rice. This sustainable rice farming using Systems of Rice Intensification (SRI), is a chemical-free method. With the support of CIMB Islamic Bank, SRI project was introduced and implemented in Ba' Kelalan in collaboration with Department of Agriculture Sarawak, SRI Lovely Farm Kedah and *Forum Masyarakat Adat Dataran Tinggi Borneo* (FORMADAT).

SRI is a proven method that can increase paddy yield. Indirectly, it reduces opening of more forests for rice cultivation. The rice produced is chemical-free and the environment is cared for (see chart below). The SRI method reduces negative agricultural impacts to the environment by eliminating pesticide and chemical fertiliser uses, which help keep the rivers clean. Indirectly, a good sustained income will take pressure off from converting more land for rice planting. SRI provides a win-win situation for farmers and ecosystems.

In 2018, 12 farmers committed to be part of this pilot project. After seeing the positive and successful outcome, another 15 farmers joined the effort this year in making rice production more sustainable in the highlands.

In the next planting season, the existing SRI farmers will train the newly joined farmers. They will help to educate and influence more farmers, not only in Long Langai, but also neighbouring villages. Healthy and environment-friendly option for rice production should win the crown of agriculture one day! ■

SRI method is more environment-friendly compared to traditional method. Why?

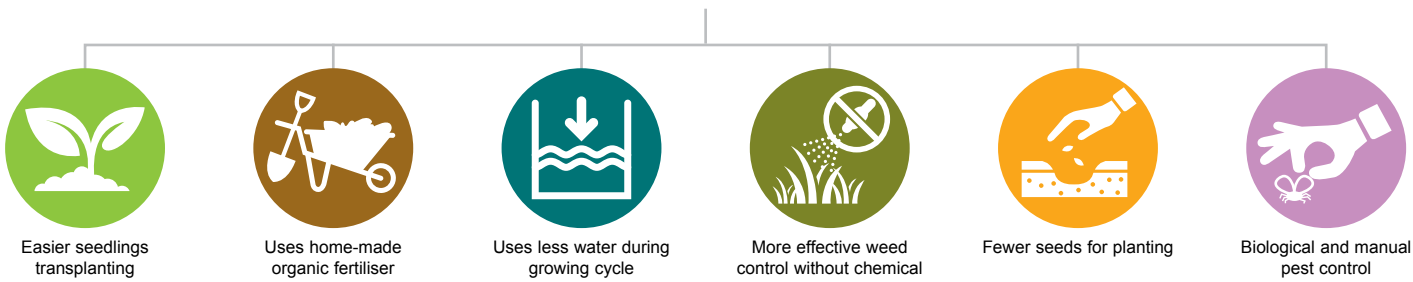

Photo: © WWF-Malaysia / Zora Chan

Farmers making organic plant fertiliser.

Photo: © WWF-Malaysia / Ezen Chan

A farmer showing a healthier SRI paddy tiller (her right hand) compared to the one grown in traditional way on the left.

Photo: © WWF-Malaysia / McKenzie Augustine

A farmer trying out self-modified weeding tool.

Voices from Communities

Photo: © WWF-Malaysia / Ezen Chan

Raymond Tagel Balang
45, Long Langai

"This SRI method means a lot to us and also motivates us to work harder in improving the yield. I am satisfied that my SRI paddy plot is flourishing with more rice grains to harvest. Under SRI, quality tillers are ensured through line planting and good aeration."

Photo: © WWF-Malaysia / Ezen Chan

Harrison Thadem Sakai
35, Long Langai

"At first, we thought that the SRI method was labour-intensive because we have to spend more time, energy and effort to monitor and manage our paddy fields. Nevertheless, we accepted the challenge and stayed committed. Thank God, hard work does pay off. We not only able to learn a new method and gain knowledge, but also contribute in sustaining the environment."

Riverbank Restoration

By McKenzie Augustine, Sarawak Conservation Programme Community Engagement and Education Officer

In Long Semadoh, rice farming is the Lun Bawang community's main source of livelihood. However, eroding riverbanks upstream of Trusan River and occasional floods are threatening their paddy fields. These floods have resulted in income loss and negative impact on the overall river ecosystem and people's livelihoods downstream.

Together with FORMADAT, WWF-Malaysia initiated a riverbank restoration project supported by CIMB Islamic Bank in Long Semadoh. We collaborated with the team from University of Nottingham Malaysia Campus (UNMS) led by hydrologist, Professor Christopher Gibbins.

As a starting point, we commissioned a hydrological study along the affected riverbanks stretching up to 5.2km, followed by dialogue sessions and discussions with communities from Puneng Trusan, Long Telingan and Long Semadoh Rayeh. The team came up with a science-based and sustainable solutions founded on the research and consultation with the villagers.

Puneng Trusan and Long Telingan agreed to participate in the pilot phase, that promotes bioengineering methods to restore the riverbanks, which was a completely new approach for the communities! Potentially a first in Sarawak, the project uses live-fencing, brush wall and coconut coir geotextile mat instead of the conventional hard engineering approaches.

We undertook this project to document an alternative approach to riverbank restoration, which we envisage can be applied to other sites. Furthermore, we aim to drive the message on good agricultural practices that minimise impacts on the environment. The riverbank restoration plan is a localised action that forms one of the three components of our intervention. The other two are along the entire 5.2 km river stretch and at the sub-catchment. ■

Timeline

February – June 2018

Photo: © WWF-Malaysia / Ezen Chan

Site survey of affected riverbanks, by Professor Christopher Gibbins from University of Nottingham Malaysia Campus.

Watch how riverbank restoration is carried out using bio-engineering methods.

July 2018 – March 2019

Photo: © WWF-Malaysia / McKenzie Augustine

Consultation, sharing and dialogue sessions with communities in Long Semadoh, which eventually obtained the consents of communities from Puneng Trusan and Long Telingan to embark on the pilot project.

April 2019

Photo: © WWF-Malaysia / McKenzie Augustine

On-site training on riverbank protection installation procedures with communities from Puneng Trusan and Long Telingan, under the guidance of Professor Christopher Gibbins.

June – September 2019

Community-led installation work in Puneng Trusan and Long Telingan.

Photo: © WWF-Malaysia / McKenzie Augustine

Community members working together to install the brush wall using bamboos at Puneng Trusan, which helps cover and stabilise the eroded riverbanks.

Photo: © WWF-Malaysia / McKenzie Augustine

A happy ending upon completion of brush wall installation.

Photo: © WWF-Malaysia / McKenzie Augustine

Installation of live-fencing using bamboos at Long Telingan, which provides structural support to the affected sections of the river.

Photo: © WWF-Malaysia / McKenzie Augustine

Gaps between woven bamboos are intersected with younger bamboo poles. This picture was taken two months later with new shoots already sprouting.

Photo: © WWF-Malaysia / McKenzie Augustine

A completed live-fencing, using materials that are easily obtained from surrounding area.

Photo: © WWF-Malaysia / Ezen Chan

Some of the more severely affected sections that require greater efforts. For this site, geotextile mat will be installed.

© Photo courtesy of Alpha Pinacle

Installation of geotextile mat at Long Telingan.

Conserving Upper Kain River, Baleh

By Hafida Bolhen, Sarawak Conservation Programme
Freshwater Management & Water Security Officer

Fish such as *empurau (Tor tambroides)* and *semah (Tor douronensis)* are fish species synonym to Sarawak. *Empurau* or *Kelah*, is regarded as the king of riverine fish in Malaysia, while *semah* is the state fish of Sarawak. In Sarawak, these Tor species, also called *mahseers*, were abundant in the 1970's, but have now become difficult to find because rivers are becoming more polluted. This calls for strategic management and conservation efforts to ensure these fish continue to thrive in our Sarawak rivers.

Thus, WWF-Malaysia is working towards improving watershed management through an integrated manner. We work closely with the government and private sectors and communities to ensure that river basins are managed properly with consideration for flows that sustain rivers and aquatic ecosystems health.

Through collaborative efforts with the Inland Fisheries Division of the Department of Agriculture Sarawak, we identified Kain River in Baleh as a High Conservation Value (HCV) river for *mahseers*. Subsequently, we proposed that the *tagang* system, a community-based conservation approach for sustainable management of fish, be implemented here.

The communities from Rumah Gare and Rumah Engsong from upper Baleh are with us on this project. These Iban communities, are excellent stewards who know the rivers like the back of their hands. They are supportive of the *tagang* system as they understand how it enables them to sustainably manage and financially benefit from it. *Semah* and *empurau* can command a market price up to RM 100 per kg and RM 700 per kg respectively.

Identifying *Tor* species – *Empurau (Tor tambroides)* and *Semah (Tor douronensis)*

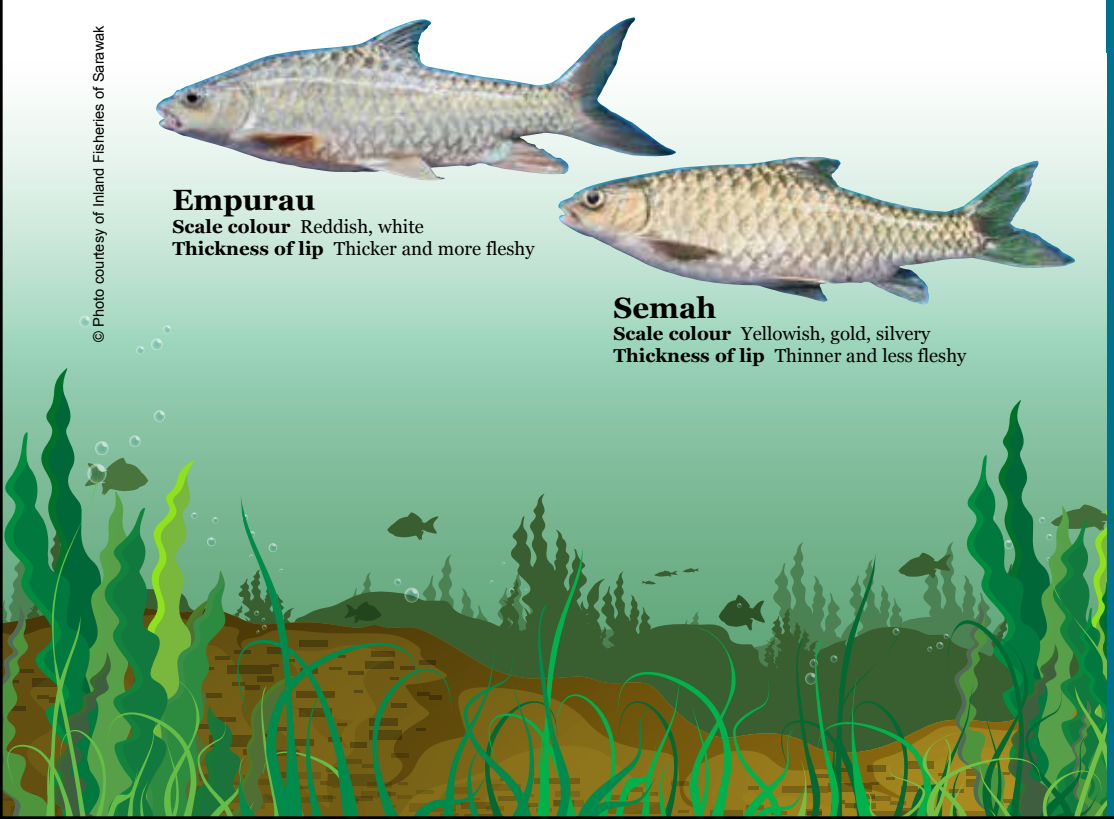


Photo: © WWF-Malaysia / Jaynsen Sibat

Healthy rivers support people's livelihoods.


Photo: © WWF-Malaysia / Hafida Bolhen

A villager proudly holding onto a *semah* that was caught in the Kain River, Baleh.


Photo: © WWF-Malaysia / Fiona Maurice

Navigating along the river is full of challenges. Here, a fallen tree blocking the passage is removed with a chainsaw.


Photo: © WWF-Malaysia

Inland Fisheries Division Sarawak, WWF-Malaysia and community members joined forces to carry out the fish assessment along Kain River.

In our assessment, we discovered that Kain River has the micro habitats needed by *mahseer*, including abundance of food such as ensurai (*Dipterocarpus oblongifolius*) and *engkabang* (*Shorea macrophylla*) seeds. For the conservation of *masheer*, we must also conserve the riverbank vegetations. The *ensurai* and *engkabang* trees growing along the river must be protected. Furthermore, these trees also prevent riverbank erosion. The local villagers are motivated to conserve *engkabang* tree as they can extract oil from their seeds, which is sold for additional income. ■

Photo: © WWF-Malaysia / Belinda Lip

Engkabang fruits are plentiful along upstream of Rajang River and it's tributaries. The fruit usually ripens once in every three to five years. It is one of the food sources for *mahseers*.

Photo: © WWF-Malaysia / Belinda Lip

The *engkabang* seeds are processed by villagers. Oil produced from the seeds is used in cooking, making soap, food spread and chocolate. The oil is also used for massage.

An *Ensurai* seed. *Ensurai* is a totally protected species because of its importance in conserving river banks, and its fruits are important food source for freshwater fish.

Photo: © WWF-Malaysia / Mazidi Abdul Ghani

Panda CLICK!:
Stories Through the Eyes of Community

By Amanda Nayra, Sarawak Conservation Programme Communications Officer

Rural communities in Kapit Division, Sarawak and Hulu Gurung in West Kalimantan, Indonesia were introduced to Panda CLICK!; a soft interactive approach to get people interested in conservation. Panda CLICK! is an awareness programme under the transboundary conservation project, Green Economy in the Heart of Borneo.

What is Panda CLICK!?

Panda CLICK! derives its meaning from the word "panda" as World Wide Fund for Nature (WWF) uses the panda as its logo while CLICK! is the acronym for 'Communication Learning towards Innovative Change and Knowledge'. Panda CLICK! is a form of visual communication by WWF aimed at initiating innovative thinking and knowledge among community through photography.

WWF-Indonesia started Panda CLICK! in Kalimantan in 2010 to create and change public perception towards conservation. Since then, it has been implemented throughout Kalimantan. In late 2017, WWF-Malaysia introduced this programme to rural communities in Song and Bukit Mabong districts. The project officially kicked off in June 2018, and we are glad that the local government and rural communities were receptive to Panda CLICK!

The communities participated for 10 months under this voluntary programme, which has allowed them to observe, protect and control the changes that could happen to their environment, communities, culture, development and other important phenomena through visual recording media. The communities were also encouraged to photograph the changes, strengths, challenges and hopes for their surrounding environment. ■

Progress to date → **Next steps**

1. Socialisation

Panda CLICK! was introduced to local government and rural communities to pique interest.

Photo: © WWF-Malaysia / Ezen Chan

2. Distribution

Participants were loaned a digital compact camera each to use for at least six months.

Photo: © WWF-Indonesia / Victor Fedelis Sentosa

3. Training

Participants were trained to use the camera and basic photography skills.

Photo: © WWF-Malaysia / Amanda Nayra

6. Exhibition

Photos collected will be exhibited and representatives from the villages will be invited to share the stories behind these photographs.

4. Monitoring

Facilitators visited each village to monitor progress and photos quality at least once in three months. Participants were encouraged to discuss issues based on their photos.

Photo: © WWF-Malaysia / Belinda Lip

5. Collection

Photos were collected back from the participants, which WWF-Malaysia and WWF-Indonesia chose and compiled selected photos to represent each district. These photos will be published into a coffee table book that promotes local knowledge and traditional wisdom, among other things.

Photo: © WWF-Malaysia / Fiona Maurice

7. Action

Multi-stakeholder collaboration at the national and district levels to address opportunities and threats faced by communities, and safeguard landscape connectivity for the conservation of biodiversity and ecosystem services.

Some photos taken by the communities


© Photo courtesy of Claudia Mutek

Looks huge: A juvenile *Polypedates leucomystax*, the size of our fingernail looks big through macro photography technique.


© Photo courtesy of Kulan Sumok

Rice planting remains an important economic activity for the Iban people.


© Photo courtesy of Usik Reba

A participant spent half an hour just to snap a perfect picture of *Ikan baung* (*Hemibagrus planiceps*).


© Photo courtesy of Peter Jabat

Rural communities in Ulu Katibas, Song, still depend on long boat as their main means of transportation.

Voices from communities


Photo: © WWF-Malaysia

Peter Jabat
49, Headman from Rumah Peter

"Panda CLICK! enables us to document our daily activities and at the same time, showcase the beautiful flora and fauna that we have here in Ulu Katibas."


Photo: © WWF-Malaysia

Anthony Untam
51, a community member from Rumah Peter

"We now know the basic rule of photography. It helps us to have different perspectives on what we do every day."

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If chosen, your name will be credited as the designer in Ranger.

Photo: © WWF-Malaysia / Ailyn Nau Sidu

Gaharu leaves badly attacked by caterpillars in March 2019.

What's happening: Greening Degraded Land with Gaharu

By Ailyn Nau Sidu, Sarawak Conservation Programme Protected Areas Officer

WWF-Malaysia works with Forest Department Sarawak to facilitate the planting of 11,000 *gaharu* (*Aquilaria microcarpa*) seedlings with communities from Rumah Manggat in Ulu Sungai Menyang. This project which started in 2017, is part of our strategy to promote co-management and improve community livelihoods in an orangutan landscape so that pressure is taken off to convert forested landscape into other land uses to generate income.

Since the planting, WWF-Malaysia has been carrying out monthly assessment and monitoring. The *gaharu* leaves can be harvested after two years to be processed into premium tea. For the time being, the project has generated income for the local communities through volunteer tourism (eg. boat transfer and homestay services) whereby hundreds of people have participated in *gaharu* tree planting activities, and maintenance activities like weeding, removing pests and fertilising.

As part of project management, we learnt how to respond fast to issues affecting the *gaharu* trees. In March 2019, the *gaharu* trees were badly affected by sudden large scale infestation of caterpillars. To prevent further damage and further spread, organic pesticides were applied as an one-off measure, followed by removal of caterpillars by hands. This lesson taught the communities to be on alert of potential future threats. Part of the project monitoring include monthly assessment of tree growth done with joint efforts by WWF-Malaysia and the local community. This project empowers the local community to manage the project. ■

Watch how collaboration between different stakeholders can stop the loss of orangutans' habitat.

Healthy *gaharu* trees thriving in Ulu Sungai Menyang, through joint effort by WWF-Malaysia and Rumah Manggat.

Photo: © WWF-Malaysia / Ailyn Nau Sidu

Next Step:
The Kuba'an-Puak Corridor Project

By Alfred Keleman, Sarawak Conservation Programme Sustainable Forest Management Officer

The Kuba'an-Puak Corridor Project, funded by the German Federal Ministry for Food and Agriculture officially ended in December 2018. In its four years of implementation, some of the key achievements were:

1. Successfully showcased a model for Sustainable Forest Management (SFM) that empowers local communities by encouraging their active participation from the inception phase to the implementation. These communities were actively involved in decision-making processes. They successfully formed the Community Representative Committee in 2016 and thereafter, the SFM Liaison Committee in 2017. These platforms provided them the opportunities to integrate local voices and needs into forest management.

2. Providing rural livelihood development for the Penan community. Among the outcomes was the first *tagang* system (a community-based conservation approach for sustainable management of fish) for Penan community in Sarawak, which was established in Long Si'ang. This was done with support from the Inland Fisheries Division, Department of Agriculture Sarawak. Another outcome was livelihood supplement programme for Penan artisans which established better market link for rattan handicrafts from Kuba'an-Puak. This was done through collaboration with Tanoti Sdn Bhd, a social enterprise, which helped to promote the products in local and international markets. The effort had generated a total sale of RM179,200 for women in the area, from a 2.5-year period until November 2018. This has significantly contributed to the household income of the people. ■

Photo: © WWF-Malaysia / Mazidi Abdul Ghani

Watch how rattan is crafted here.

Photo: © WWF-Malaysia / Mazidi Abdul Ghani

Puzzle Contest
Connect to Green Heart

10 lucky winners
will receive our limited edition felt keychain!

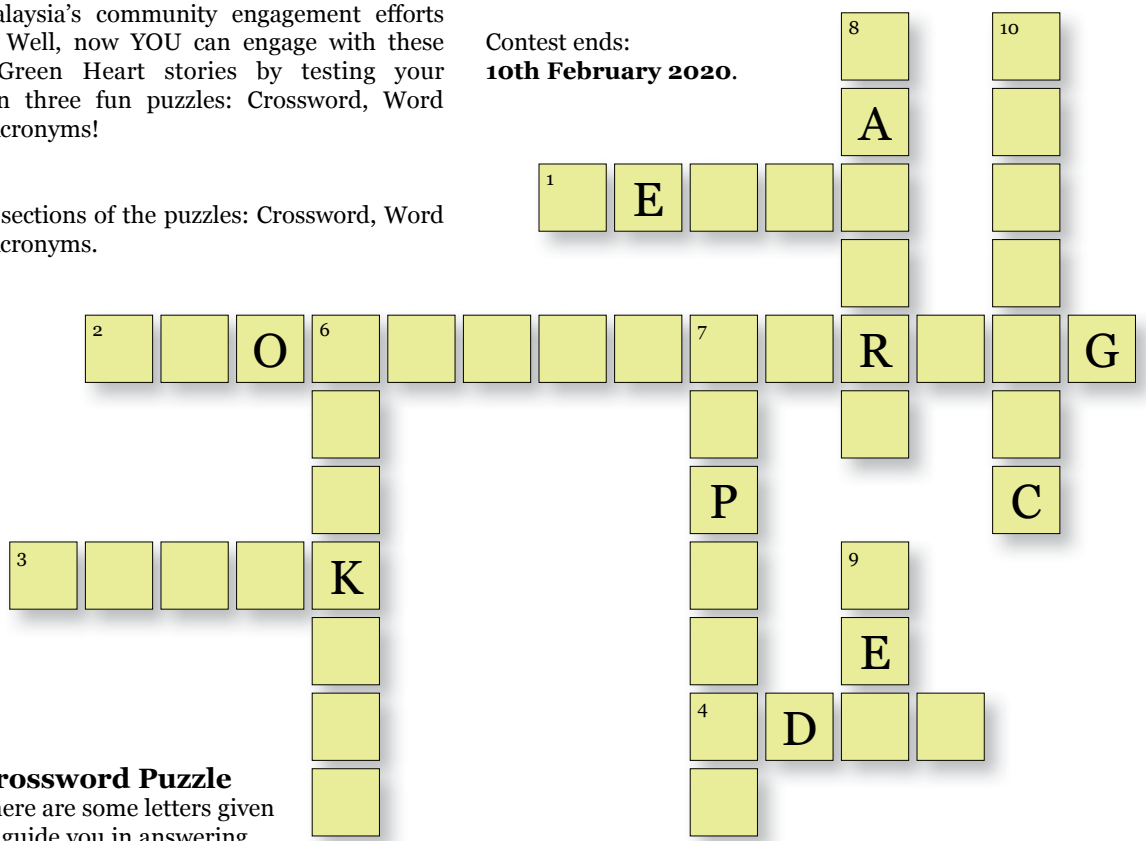
Did you enjoy reading this issue of the Green Heart on WWF-Malaysia's community engagement efforts in Sarawak? Well, now YOU can engage with these interesting Green Heart stories by testing your knowledge in three fun puzzles: Crossword, Word Search and Acronyms!

Step 1:
Answer all 3 sections of the puzzles: Crossword, Word Search and Acronyms.

Step 2:
Scan or snap a clear picture of your completed puzzle.

Step 3:
Email to kawan@wwf.org.my with the subject "Green Heart Puzzle Contest". Include your details as follows: Full Name (as per NRIC), NRIC number and Mobile number.

Contest ends:
10th February 2020.



Crossword Puzzle
There are some letters given to guide you in answering this puzzle.

Across
1) *Tor Douronensis* is the scientific name for _____.
2) _____ method was used to restore riverbanks by placing live-fencing, brush wall and coconut coir geotextile mat.
3) Panda _____ is a form of visual communication aimed at initiating innovative thinking and knowledge among community through photography.
4) The Lun Bawang community is working with WWF-Malaysia to promote sustainable farming of their fragrant _____ rice.
5) The _____ system is a community-based conservation approach for sustainable management of fish.

Down
6) _____ seed is one of the food sources for *mahseers*.
7) *Tor Tambroides* is the scientific name for _____.
8) The planting of _____ seedlings is a project to promote co-management and improve community livelihoods in an orangutan landscape.
9) The *gaharu* leaves can be harvested to be processed into premium _____.
10) SRI method uses home-made _____ fertiliser.

Word Search

WWF-Malaysia is working with four communities in Sarawak. Find the names of the communities in this Word Search puzzle. The words can be found diagonally, horizontally, vertically and backwards.

L	A	D	E	R	O	P	I	C	U
V	U	S	E	B	U	E	N	O	N
S	B	N	U	H	E	N	A	A	U
E	N	E	B	T	U	A	R	H	A
M	O	G	H	A	N	N	U	E	N
I	F	E	W	U	W	E	O	R	A
A	I	B	A	N	P	A	H	W	L
G	O	A	K	E	L	E	N	A	E
A	B	I	N	E	M	O	O	G	M

Acronyms

We have used a number of acronyms in this issue of the Green Heart. What do these acronyms stand for:

SRI: _____

CEE: _____

FORMADAT: _____

HCV: _____

CLICK: _____

SFM: _____

SIA: _____

BMP: _____