A dirt road through a field with trees in the background

AI-generated content may be incorrect.A black background with many small flowers

AI-generated content may be incorrect.

Dr Sarena Che Omar, Alyssa Farha Jasmin and Siti Aiysyah Tumin

Monograph of Paddy Smallholders

WORKING PAPER 2/19 | 15 OCTOBER 2019

A dirt road through a field with trees in the background

AI-generated content may be incorrect.A black background with many small flowers

AI-generated content may be incorrect.

Dr Sarena Che Omar, Alyssa Farha Jasmin and Siti Aiysyah Tumin

WORKING PAPER 2/19 | 15 OCTOBER 2019

Monograph of Paddy Smallholders

A dirt road through a field with trees in the background

AI-generated content may be incorrect.A black background with many small flowers

AI-generated content may be incorrect.

Monograph of Paddy Smallholders

WORKING PAPER 2/19 | 15 OCTOBER 2019

Dr Sarena Che Omar, Alyssa Farha Jasmin and Siti Aiysyah Tumin

A dirt road through a field with trees in the background

AI-generated content may be incorrect.A black background with many small flowers

AI-generated content may be incorrect.

Monograph of Paddy Smallholders

WORKING PAPER 2/19 | 15 OCTOBER 2019

Dr Sarena Che Omar, Alyssa Farha Jasmin and Siti Aiysyah Tumin

# Khazanah Research Institute

|  |
| --- |
| The KRI Working Papers are a series of research documents by the author(s) containing preliminary findings from ongoing research work. They are a work in progress published to elicit comments and encourage debate. In that respect, readers are encouraged to submit their comments directly to the authors.  The views and opinions expressed are those of the author and may not necessarily represent the official views of KRI. All errors remain the authors’ own. |

WORKING PAPER 2/18 | 15 OCTOBER 2018

# Monograph of Paddy Smallholders in Bario

***This working paper was prepared by the following researchers from the Khazanah Research Institute: Dr Sarena Che Omar, Alyssa Farha Jasmin and Siti Aiysyah Tumin. It was approved by the editorial committee namely Dr Nungsari Ahmad Radhi, Datuk Hisham Hamdan, Dr Suraya Ismail and Junaidi Mansor.***

***Authors’ email address:*** [***Sarena.Omar@krinstitute.org***](mailto:Sarena.Omar@krinstitute.org)***,*** [***Alyssa.Jasmin@krinstitute.org***](mailto:Alyssa.Jasmin@krinstitute.org)***,*** [***Siti.Tumin@krinstitute.org***](mailto:Siti.Tumin@krinstitute.org)

***Icons used in graphics are from*** [***www.flaticon.com***](http://www.flaticon.com)***.***

***Attribution – Please cite the work as follows: Khazanah Research Institute. 2018. A Monograph of Paddy Smallholders in Bario: Working Paper. Kuala Lumpur: Khazanah Research Institute. License: Creative Commons Attribution CC BY 3.0.***

***Translations – If you create a translation of this work, please add the following disclaimer along with the attribution: This translation was not created by Khazanah Research Institute and should not be considered an official Khazanah Research Institute translation. Khazanah Research Institute shall not be liable for any content or error in this translation.***

***Information on Khazanah Research Institute publications and digital products can be found at*** [***www.KRInstitute.org***](http://www.KRInstitute.org)***.***

Executive Summary

This paper is the second of a series of working papers on Malaysian smallholders. It aims to understand the cultivation of premium specialty rice in Bario, Sarawak. Following are key takeaways:

|  |  |
| --- | --- |
| **SECTION 2 – Lorem Ipsum** | |
|  | * Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus sed sem a lorem sagittis dictum nec ut elit. * Suspendisse potenti. Aenean euismod nunc at nibh fermentum, sed viverra mauris gravida. * Curabitur facilisis justo non sapien commodo, id elementum magna pulvinar. |
| **SECTION 3 – Lorem ipsum** | |
| **Map with pin** | * Integer volutpat tortor in massa tempor, sit amet blandit ligula posuere. * Aliquam erat volutpat. Sed ac ligula eu arcu varius tempus. |
| **SECTION 4 – Lorem Ipsum** | |
|  | * Integer volutpat tortor in massa tempor, sit amet blandit ligula posuere. * Aliquam erat volutpat. Sed ac ligula eu arcu varius tempus.. |
| **SECTION 5 – Lorem Ipsum** | |
|  | * Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus sed sem a lorem sagittis dictum nec ut elit. * Suspendisse potenti. Aenean euismod nunc at nibh fermentum, sed viverra mauris gravida. |

Acknowledgements

The authors would like to express their sincerest gratitude to Mr Thomas Hii, Managing Director of Bario Ceria Pte. Ltd, and Madam Dayang Nalin, for their willingness to be interviewed, their interesting experience and insights about paddy cultivation, as well as company when the authors visited paddy fields and the rice mill in Bario, Sarawak.

The authors would also like to thank the hosts of Ngimat Ayu House, consisting of Mr Nigel, Mr Scott Ngimat and Ms. Sina Muned Aran Enne Gerawat for their generous hospitality. Additionally, the authors also appreciate Mr David Lian Labang and Ms Sam for their company during the pineapple farm and salt spring visits in Bario.

A special thanks to the Department of Agriculture Sarawak as well for sharing paddy data for the year 2017.

Finally, the authors would like to thank Junaidi Mansor, Director of Research at KRI for overseeing this initiative, and providing guidance and support.

This work also benefitted greatly by utilising open source icons made by the talented designers from [www.flaticon.com](http://www.flaticon.com) for the various infographics included in this monograph[[1]](#footnote-2).

Table of Contents

|  |  |  |  |
| --- | --- | --- | --- |
| **Executive Summary** | | 1 | |
| **Table of Contents** | | 3 | |
| 1. | **Introduction** | | 5 | |
|  | Lorem ipsum dolor sit amet | | 7 | |
| 2. | **Lorem ipsum dolor sit amet** | | 9 | |
|  | 2.1. Lorem ipsum dolor sit amet | | 10 | |
|  | 2.2. Lorem ipsum dolor sit amet | | 13 | |
| 3. | **Lorem ipsum dolor sit amet** | | 15 | |
|  | 3.1. Lorem ipsum dolor sit amet | | 17 | |
|  | 3.2. Lorem ipsum dolor sit amet | | 23 | |
|  | 3.2. Lorem ipsum dolor sit amet | | 25 | |

Introduction

# Description (Heading 1)

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

1. Lorem ipsum dolor sit amet, consectetur adipiscing elit.
2. Sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.
3. Ut enim ad minim veniam, quis nostrud exercitation ullamco.
4. Duis aute irure dolor in reprehenderit in voluptate velit.

Excepteur sint occaecat cupidatat non proident.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris [[2]](#footnote-3)sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

# Objective and Paper Outline

## This paper is structured as follows:

Section 2 – [Section Title]  
[Brief description of what this section covers. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat.]

Section 3 – Lorem Ipsum  
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat.  
Box Article 1: [Optional box article title or topic.]

Section 4 – Lorem Ipsum  
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat.  
Box Article 2: [Optional box article title or topic.]

Section 5 – Lorem Ipsum  
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat.

Section 6 – Lorem Ipsum  
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat.

Section 7 - Lorem Ipsum  
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat.

# Description A (Heading 1)

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus.

Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

## Description 1 (Heading 2)

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, [[3]](#footnote-4)nec volutpat orci elementum.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

|  |  |
| --- | --- |
| Figure : Export, import and trade balance in rice (USD m), 2000–2016 | Figure : Production and consumption of rice (metric tonnes), 1993–2016 |

|  |  |
| --- | --- |
|  |  |
| Source:  Data from UN Comtrade (n.d.)  Chart by Khazanah Research Institute | Source:  Data from CEIC Database (n.d.), OECD Stats (n.d.)  Chart by Khazanah Research Institute |
|  |  |

## Description 2 (Heading 2)

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

|  |  |
| --- | --- |
| Division | Production |
| AA | 50,671 |
| AB | 41,625 |
| AC | 35,655 |
| AD | 29,594 |
| AE | 20,300 |
| AF | 19,185 |
| AG | 13,790 |
| AH | 12,470 |
| AI | 10,463 |
| AJ | 9,789 |
| AK | 7,069 |
| Total: | 250,611 |
| Total: | 1,765,700 |

Source:

Data from the Department of Agriculture Sarawak (2017). Obtained by request.

\*The Samarahan division is combined with Serian.

\*\*To the best of our knowledge, data for the whole of Malaysia for 2017 is notpublicly available. Data used here is for the year 2016, obtained from Department of Statistics Malaysia.

Figure 3: Lorem Ipsum

Source:

Lorem ipsum

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

|  |  |  |
| --- | --- | --- |
| Figure : Average share of expenditure on rice of total food and beverage (F&B) spending by selected states, per household, 2016 (%) | Figure : Average share of expenditure on rice of F&B spending by strata, per household, various years (%) | |
|  | |  | |
| Source:  Data from DOSM (2017)  Chart by Khazanah Research Institute | | Source:  Data from DOSM (2014, (2015, (2017)  Chart by Khazanah Research Institute | |

# Heading 1

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

Bario and Paddy Farming

# Bario, the Kelabits and the *Adan* variety

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum people[[4]](#footnote-5).

**A map of the country

AI-generated content may be incorrect.**

Subsistence paddy cultivation has always been part of the Kelabit community for many generations. In fact, the community primarily identify themselves as rice growers[[5]](#footnote-6). Beyond its role as the primary source of nourishment, rice is also an important element of social cohesion and symbol of status[[6]](#footnote-7)

Figure : Lorem Ipsum

A field of tall grass

Description generated with very high confidenceLorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum people[[7]](#footnote-8). Long-term cultivation of this speciality rice, which is elaborated further in Box Article 1[[8]](#footnote-9) [[9]](#footnote-10).

Title 2

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum

This section will elaborate four key challenges of paddy cultivation in Bario, which are:

* Farming method: the trade-off between traditional and modern farming methods;
* Geographic Indicators, Intellectual Property and R&D: the limited formalisation of the Bario rice’s identity;
* Supply chain: development and improvement of linkages; and
* Labour shortage: the ageing of local farmers in Bario

## 2.1. Lorem ipsum dolor sit amet

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

Figure .: Lorem Ipsum

Note: The percentages do not add up to 100% given that some programmes target more than one age group. The above refers to federal government programmes and excludes programmes under the Covid-19 stimulus packages

Source: MOF (2021a), KRI calculations

|  |  |
| --- | --- |
|  |  |
| ▬▬ Children ● ● ● ● Working age ▬ ▬ Youth ▬▬ Elders | |

|  |  |
| --- | --- |
| Figure .: Number of social assistance programmes, by life cycle target, 2012 – 2020 | Figure .: Fiscal spending on social assistance, by life cycle target, 2012 – 2020 |

Note: The above refers to federal government programmes and excludes programmes under the Covid-19 stimulus packages

Source: MOF (2021a), KRI calculations

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

## 2.2. Lorem ipsum dolor sit amet

For elders, Bantuan Warga Emas (BWE) by JKM is the programme with the highest allocation, at RM600 million in 2020 (Figure 2.12), but it is intended only for elders under the poverty line. In 2020, just less than 4% of old-aged individuals (aged 60 years and above) were recipients of the scheme, receiving a monthly amount of RM350[[10]](#footnote-11). It is further concerning that other social assistance schemes entail additional targeting/eligibility requirements other than income, such as retirees from specific occupations from the public sector, with many having little to do with ensuring sufficient old-age income for the general population. This is concerning given that old-age savings remain inadequate for many in Malaysia[[11]](#footnote-12).

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

Figure .: Lorem ipsum

Note: The above refers to federal government programmes and excludes programmes under the Covid-19 stimulus packages

Source: MOF (2021a), KRI calculations

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

Figure .11: Lorem ipsum

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

## 2.3. Lorem ipsum dolor sit amet

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum Malaysia[[12]](#footnote-13).

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

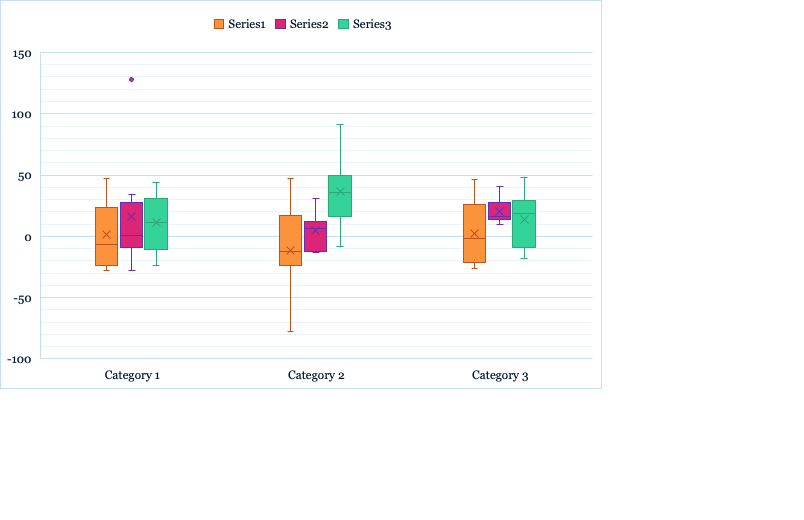
Figure .12: Lorem ipsum

## Description C.1 (Heading 2)

Ut sit amet urna id ante ullamcorper dictum. Mauris venenatis nibh a nisi rutrum feugiat. Pellentesque turpis diam, rhoncus tincidunt lacinia et, fringilla eu tortor. Integer nec placerat mauris. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Praesent facilisis, elit sollicitudin pharetra pulvinar, sem velit aliquam lacus, nec ornare nulla diam in enim. Nunc ac odio eget tortor accumsan porta non id ligula. Ut sit amet urna id ante ullamcorper dictum. Mauris venenatis nibh a nisi rutrum feugiat. Pellentesque turpis diam, rhoncus tincidunt lacinia et, fringilla eu tortor. Integer nec placerat mauris. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Praesent facilisis, elit sollicitudin pharetra pulvinar, sem velit aliquam lacus, nec ornare nulla diam in enim.

Figure .13: Lorem ipsum

Figure .14: Lorem ipsum



## 2.2. Lorem ipsum dolor sit amet

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum RM350[[13]](#footnote-14).

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus.

Figure .13: Lorem ipsum

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum RM350[[14]](#footnote-15).

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus.

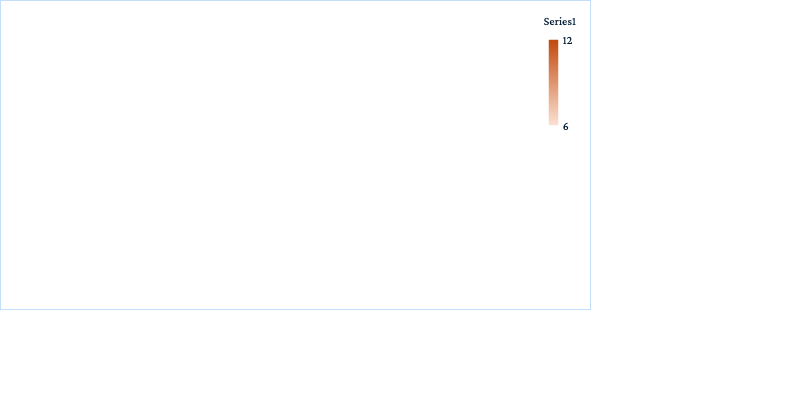
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BOX ARTICLE 1: Understanding the Genetics of Bario Rice  Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum  Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum  Figure : The Genetic Similarity of Eight Cultivars of Bario Rice  **Key**   |  |  |  | | --- | --- | --- | | **Rice Cultivar** | **Name** | **Sample Source** | | Bario | B. | Department of Agriculture, Sarawak | | Bario second sample | B. 2 | Department of Agriculture, Sarawak | | Bario Banjal | B. Banjal | Tatau | | Bario Chelum | B. Chelum | Department of Agriculture, Sarawak | | Bario Halus | B. Halus | Tatau | | Bario Lowland | B. Low (M) | Meradong | | Bario Lowland | B. Low (S) | Kg Bunan, Serian | | Bario Sederhana | B. Sdrhn | Tatau |   Illustration by KRI. Adapted from Wong et. al. Bienabe et al.)[[15]](#footnote-16) |

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non

tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

Figure .13: Lorem ipsum

Figure .13: Lorem ipsum



## 2.3 Lorem ipsum

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum RM350[[16]](#footnote-17).

“… intensive tillage, monoculture, irrigation, application of inorganic fertilizer, chemical pest control, genetic manipulation of domesticated plants […] —form the backbone of modern industrial agriculture.”

Adapted from Gliessman[[17]](#footnote-18)

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum RM350[[18]](#footnote-19).

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus.

## 2.4 Lorem ipsum

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum RM350[[19]](#footnote-20).

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncuseen.

## 2.5 Lorem Ipsum

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum RM350[[20]](#footnote-21).

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus. Mauris sed dolor et nulla bibendum eleifend. Donec et est ut ligula ullamcorper sagittis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Morbi convallis risus ut semper ullamcorper. Integer nec justo non libero vulputate suscipit. Sed euismod tellus ac augue faucibus, nec volutpat orci elementum.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo. Aliquam erat volutpat. Suspendisse suscipit, mi non tincidunt tincidunt, augue sapien convallis mi, id feugiat nisl sapien ac lorem. In blandit metus nec eros porttitor, in tincidunt nisl rhoncus them[[21]](#footnote-22).

“Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla facilisi. Vivamus quis consequat justo..”

Mr Thomas Hii

Concluding Remarks

This working paper sheds light on the difficulties faced by smallholders in paddy farming in the rural, isolated area of Bario. To overcome some of these issues, Bario Ceria has assisted with the basic infrastructural development needs of the village, such as building roads and setting up proper irrigation systems. Bario Ceria also assist farmers by renting out their heavy machinery services, such as for ploughing and harvesting, so that the need for manual labour is reduced. At the very end of the supply chain, Bario Ceria also help with the marketing of Bario rice.

Smallholders, such as Madam Dayang Nalin, combines independent management of farms and marketing of products with the machinery services provided by Bario Ceria. Her challenge as a smallholder includes the mismatch of supply and demand for her rice and Madam Dayang Nalin continues to diversify her income base via multiple entrepreneurial endeavors.

# Key takeaways

* The **uniqueness** of the *Adan* rice variety in Bario is still **under-researched**, limiting the effective adoption of modern agriculture.
* Additionally, the introduction of modern commercial farming presents an **identity crisis** for rural smallholders as there is a conflict between increasing rural income by adopting productivity-inducing cultivation methods or retaining old methods to be able to sell it as pesticide and fertiliser-free rice product but with very low yield and poor product consistency.

References

ADB. (2008). "Public-Private Partnership (Ppp) Handbook." <https://www.adb.org/sites/default/files/institutional-document/31484/public-private-partnership.pdf>.

Bienabe, Estelle, et al. (2009). The Economics of Geographical Indications: Towards a Conceptual Framework for Geographical Indication Research in Developing Countries. World Intellectual Property Organization (WIPO). <http://www.wipo.int/edocs/pubdocs/en/wipo_pub_1012-chapter4.pdf>.

CAB Direct. (n.d.). Database for Applied Life Sciences. <https://www.cabdirect.org/?target=%2fcabdirect%2fabstract%2f20103053824>.

CEIC. (n.d.). "Household Income and Expenditure Survey (1999)."

CEIC Database. (n.d.). <https://www.ceicdata.com/>.

DOA Sarawak. (2013). Sarawak Agriculture Statistics. Department of Agriculture (DoA) Sarawak. <http://www.doa.sarawak.gov.my/modules/web/pages.php?mod=webpage&sub=page&id=86&menu_id=0&sub_id=135>.

DOA Sarawak. (n.d.). Potential of Sarawak Traditional Rices for Export. Department of Agriculture Sarawak. <http://padi.mardi.gov.my/dokumen/slide/L7%20Potential%20of%20Sarawak%20Traditional%20Rice%20_Datu%20(DOA%20Sarawak).pdf>.

DOSM. (2014). 2010 Report on Household Expenditure Survey. Department of Statistics Malaysia.

DOSM. (2015). 2014 Household Expenditure Survey Department of Statistics Malaysia.

DOSM. (2017). 2016 Household Expenditure Survey Department of Statistics Malaysia.

e-Bario. (n.d.). "E-Bario: Principal Findings." <http://www.unimas.my/ebario/Main_index.htm>.

.

1. Icons used are created by Roundicons, Smashicons, Freepik and Vector Market. [↑](#footnote-ref-2)
2. Lorem ipsum dolor sit amet, consectetur adipiscing elit. [↑](#footnote-ref-3)
3. Lorem ipsum dolor sit amet, consectetur adipiscing elit. [↑](#footnote-ref-4)
4. Based on KRI interview with locals [↑](#footnote-ref-5)
5. Janowski (2004) [↑](#footnote-ref-6)
6. Ibid. [↑](#footnote-ref-7)
7. Based on KRI interview with locals [↑](#footnote-ref-8)
8. It is observed that the local Kelabit community have informal knowledge of their paddy and while laboratory research has been conducted, the Scientific knowledge have yet to reach and benefit the local community and Bario Ceria. [↑](#footnote-ref-9)
9. Based on site observations and interviews by Khazanah Research Institute [↑](#footnote-ref-10)
10. MOF (2021a) [↑](#footnote-ref-11)
11. See [Chapter 5](#_ENSURING_OLD-AGE_INCOME) for further discussion on issues related to old-age social protection. [↑](#footnote-ref-12)
12. See [Chapter 5](#_ENSURING_OLD-AGE_INCOME) for further discussion on issues related to old-age social protection. [↑](#footnote-ref-13)
13. MOF (2021a) [↑](#footnote-ref-14)
14. MOF (2021a) [↑](#footnote-ref-15)
15. Wong et al (2009) [↑](#footnote-ref-16)
16. MOF (2021a) [↑](#footnote-ref-17)
17. Gliessman (2014) [↑](#footnote-ref-18)
18. MOF (2021a) [↑](#footnote-ref-19)
19. MOF (2021a) [↑](#footnote-ref-20)
20. MOF (2021a) [↑](#footnote-ref-21)
21. FAO (2017) [↑](#footnote-ref-22)